DOCUMENT RESUME

ED 099 643 CE 002 743

AUTHOR Hinrichs, Roy S., Comp.
TITLE Experiencing the Free Enterprise System through Industrial Arts. Industrial Arts Series 10,000.
INSTITUTION Mississippi Research Coordinating Unit for Vocational-Technical Education, State College.
SPONS AGENCY Mississippi State Dept. of Education, Jackson. Div. of Vocational and Technical Education.
PUB DATE 74
NOTE 130p.; Photographs are not reproducible

EDRS PRICE MF-$0.75 HC-$6.60 PLUS POSTAGE
DESCRIPTORS Elementary Education; *Industrial Arts; *Industrial Education; *Junior High Schools; Secondary Education; *Student Projects
IDENTIFIERS Economic Systems; *Free Enterprise System

ABSTRACT

The manual provides information and guidelines necessary to develop a knowledge and understanding of industry based on the belief this can best be done by studying industry. Intended for use at the junior high school level, the manual is divided into two sections. The first contains information designed to give insight into industry and the free enterprise system in which it operates. It discusses capital; organization; marketing research; engineering; the roles of departments of personnel, purchasing, and public relations; production and its planning; distribution; advertising and sales; and terminating a corporation. Each division includes a list of terms the student should know and suggestions for discussion and research topics. The second section is an instruction unit to be used as a guide in setting up and operating a small student industry. The section divisions parallel those of the first section. The two sections are meant to be used simultaneously with the aim of creating an interesting blend of classwork and laboratory activities. (Author/AG)

ED 099443

BEST COPY AVAILABLE

Experiencing the Free Enterprise System Through Industrial Arts

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

CE003792

ED 099643

EXPERIENCING THE FREE ENTERPRISE SYSTEM

THROUGH INDUSTRIAL ARTS

Published by

Mississippi State University
Research and Curriculum Unit
for
Vocational and Technical Education
Mississippi State, Mississippi

In Cooperation with

Division of Vocational and Technical Education
Mississippi State Department of Education
Jackson, Mississippi

Compiled by

Roy S. Hinrichs
Associate Professor
Mississippi State University

Industrial Arts Series
Publication Number 10,000

1974

Direct Inquiries to:

Research and Curriculum Unit for
Vocational-Technical Education
Drawer DX
Mississippi State, Mississippi 39762

Mississippi State University does not discriminate on the grounds of race, color, or national origin.

FOREWORD

Our basic needs — food, clothing, and shelter — as well as other items that contribute to the abundant life here in the United States are the products of our industrial society. An awareness of the importance of industry in our society, as well as a fundamental understanding of industrial processes, should be taught to students enrolled in our schools.

For years Industrial Arts teachers have been charged with the responsibility of interpreting industry to the students enrolled in their courses. This publication is a welcomed addition to our teaching material. It provides information for pursuing a study of industry, as well as instructions for youngsters as they actively engage in their own student-operated industry. The emphasis is on learning by doing — a tradition with Industrial Arts.

It is hoped that all Industrial Arts teachers, particularly at the junior high level, will seriously consider including this study of industry in their program.

Larry Godfrey
State Supervisor
Industrial Arts Education

ACKNOWLEDGMENTS

Acknowledgement is extended to the following companies for sharing the pictures used in Part One of this manual:

Allis-Chalmers Manufacturing Company
Milwaukee, Wisconsin

American Optical Corporation
Southbridge, Massachusetts

Avon Products, Inc.
New York, New York

Bell Telephone Laboratories
Murray Hill, New Jersey

Bethlehem Steel Corporation
Bethlehem, Pennsylvania

Black and Decker Company
Towson, Maryland

The Boeing Company
Seattle, Washington

Borg-Warner Corporation
York, Pennsylvania

Eastman Kodak Company
Rochester, New York

Ford Motor Company
Dearborn, Michigan

The Gates Rubber Company
Denver, Colorado

Hardin's Bakeries
Meridian, Mississippi

Ingalls Shipbuilding
Pascagoula, Mississippi

International Business Machine Corporation
Armonk, New York

International Harvester Company
Hinsdale, Illinois

3M Company
St. Paul, Minnesota

Masonite Corporation
Laurel, Mississippi

McDonnell Douglas Corporation
St. Louis, Missouri

Medtronic, Inc.
Minneapolis, Minnesota

Northrop Corporation
Los Angeles, California

Sears, Roebuck and Company
Chicago, Illinois

Sperry New Holland
New Holland, Pennsylvania

Union Carbide Corporation
New York, New York

Volkswagen of America
Englewood Cliffs, New Jersey

Western Electric
Columbus, Ohio

Special appreciation is extended to Mr. Larry Anderson and his industrial arts students at Henderson Junior High School, Starkville, Mississippi. Pictures appearing in Part Two of this manual were taken as the classes were experiencing the Free Enterprise System.

Appreciation is extended to Mr. Leo Hines for the art work appearing in the manual.

AUTHENTICATION COMMITTEE

The material in this publication was reviewed and endorsed as being appropriate and beneficial for inclusion in the industrial arts curriculum by an authentication committee. Deep appreciation is extended to the members for their time and efforts.

Mr. Larry Anderson
Industrial Arts Instructor
Henderson Junior High School
Starkville, Mississippi

Mr. Kenneth Gill
Industrial Arts Instructor
Pearl McLaurin Junior High School
Jackson, Mississippi

Mr. Larry L. Godfrey
State Supervisor
Industrial Arts Education
Jackson, Mississippi

Mr. Robert Honeycutt
Industrial Arts Instructor
Northeast Mississippi Junior College
Booneville, Mississippi

Mr. Fred Hooper
Director, Vocational Education
Leflore County Schools
Greenwood, Mississippi

Dr. E. Max Hunter
Head, Industrial Education Department
University of Southern Mississippi
Hattiesburg, Mississippi

Mr. Art D. Nabors
Assistant Supervisor
Industrial Arts Education
Jackson, Mississippi

Dr. James E. Patton
Instructional Materials Specialist
for Distributive Education
Research and Curriculum Unit
Mississippi State University

Mr. John Perry
Instructional Materials Specialist
for Business Education
Research and Curriculum Unit
Mississippi State University

Mr. Larry Summers
Industrial Arts Instructor
Yazoo City High School
Yazoo City, Mississippi

Mr. Robert White
Industrial Arts Instructor
Pass Christian High School
Pass Christian, Mississippi

TABLE OF CONTENTS

FOREWORD iii
ACKNOWLEDGMENTS iv
AUTHENTICATION COMMITTEE v
INSTRUCTIONS TO THE TEACHER-ADVISOR 1

PART ONE — A STUDY OF INDUSTRY

BUSINESSES IN THE UNITED STATES 7
The Free Enterprise System, What Businesses Do, The Importance of Businesses in the United States, Reasons for Going into Business, Ownership of a Business, Legal Concept of a Business, Summary.

RAISING CAPITAL 13
Working Capital, Where the Money Comes From, Corporation Stock, Deciding on Value, Buying and Selling Stock, Summary.

ORGANIZING THE BUSINESS 19
Importance of Organization, The Right Organization for a Business, The Need for a Board of Directors, What the Board Does, How Decisions Are Reached, The President and Other Major Officers, Chain of Command, Authority and Responsibility, Summary.

MARKETING RESEARCH 25
What Market Research Is, Market Analysis, Market Survey, Sales Forecast, Summary.

ENGINEERING 29
Begin with a Decision, Design Engineering, Product Engineering, Staff or Consultants, Summary.

PERSONNEL DEPARTMENT 35
Job Descriptions, Hiring Procedures, Record Keeping, Handling Union Affairs, Other Responsibilities, Summary.

PURCHASING DEPARTMENT 43
What the Department Does, What Must Be Purchased, Cost of Materials, Purchasing Equipment and Supplies, Specifications, Getting Bids, Receiving Materials and Supplies, Invoices and Sales Slips, Summary.

PUBLIC RELATIONS 49
What Public Relations Is, Many Different Publics, Methods Used in Public Relations, Public Relations — Everybody's Job, Summary.

PLANNING FOR PRODUCTION 53
The Decision to Make or Buy, Analysis of Operations, The Decision to Expand or Add Another Shift, Routing of Work, Flow Charts, Materials Handling, Safety, Jigs and Fixtures, Packaging the Product, Inspection, Trial Run, Summary.

PRODUCTION 69
The Old System, Modern Mass Production, Steps in Mass Production, Summary.

DISTRIBUTION 75
Wholesaling, Retailing, Selling Direct, Buying Direct, Chain Stores, Franchised Dealerships, Summary.

ADVERTISEMENT AND SALES 79
Advertisement; Kinds of Advertisement; National, Regional, and Local Advertisement; Cost of Advertisement; Sales; Retail Selling; Cost of Sales; Summary.

TERMINATION OF A CORPORATION 85
Voluntary Dissolution, Involuntary Dissolution, Dissolution Procedure, Summary.

PART TWO — YOUR STUDENT BUSINESS

INTRODUCTION 91
An Overview of the Business, Requirements for Success, Everybody Is a Worker, Role of the Teacher-Advisor, How the Business Operates, Responsibility to Get the Job Done.

ORGANIZING YOUR STUDENT BUSINESS 95
Desiging an Organization; Work Must be Planned; Election of Officers; Selecting Company Name; Raising Capital to Get Started; Opening a Checking Account; Wages, Salaries, and Commissions.

SELECTING A PRODUCT TO PRODUCE 105
Factors to Consider Before Selecting Product, Sources for Ideas, Brainstorming Technique.

ENGINEERING THE PRODUCT 111
Building the Prototype, Preparing Working Drawings, Preparing Parts and Materials Lists.

PRICING THE COMPANY PRODUCT 113
Price Must Be Competitive, Break-Even Point.

PURCHASING MATERIALS AND SUPPLIES 117
Duty of the Purchasing Department, Making Requisition Forms, Checking Requisition Forms Carefully, Requesting Bids, Finding the Best Price, Purchasing, Checking in Materials, Accounting Procedures, Summary.

PLANNING FOR PRODUCTION 121
Storage of Materials, Operation Analysis, Setting Up Production Line, Assigning and Training Work Force, Quality Control, Trial Run.

PRODUCTION 127
Production Control, Safety During Production, Inspection, Completing Production.

SELLING THE PRODUCT 131
Duties of the Department, Preparing Required Forms, Selling Preferred Stock, The Advertisement Campaign, Advanced Sales, The Sales Program, Commissions and Sales Award, Accounting Procedures, Summary.

TERMINATION OF A CORPORATION 137
Planning for Liquidation, Figuring Dividends, Liquidation Process.

THE SERVICE INDUSTRY 141
Service vs. Manufacture, Same Approach.

INSTRUCTIONS TO THE TEACHER-ADVISOR

For decades it has been claimed that one of the values derived from a course in Industrial Arts should be a knowledge and understanding of industry. Some teachers, through the introduction of innovative ideas in their courses, are experiencing success in meeting this objective. Unfortunately, however, their numbers are few. In far too many cases, with the exception of exposure to a few tools and machines similar to those used in industry, very little about industry itself has been taught to students enrolled in such courses. Attention seems to be focused on the use and care of hand tools and making individual projects. Little, if any, reference is made concerning how industry would go about designing, setting up, manufacturing, and distributing similar projects.

The purpose of this manual is to provide information and guidelines necessary to develop a knowledge and understanding of industry. It is based on the belief that this can be done best by studying industry — not care and use of hand tools or making individual projects. It is intended for use at the junior high level.

The manual contains two sections. The first section contains information designed to give insight into industry and the free enterprise system in which it operates. The second section is an instruction unit to be used as a guide in setting up and operating a small student industry. Hopefully, the two sections will be used simultaneously rather than as separate, independent units. The aim should be to create an interesting blend of classwork and laboratory activities. As a suggestion for conducting the course, Tuesdays and Thursdays might be devoted to classroom work, studying about industry, and using the information section of the manual. The other three periods during the week could be devoted to laboratory activities with the students actually operating their own industry using the second section of the manual as a guide. Although it could be used as such, the manual is not intended for a course spanning a full school year. It is intended for the teacher wishing to give his students the opportunity to become involved in a business and to experience what that involvement means in terms of responsibility, cooperation, decision-making, work, excitement, joys, and perhaps sorrows. If a semester, or only six weeks, can be devoted to such an undertaking, it can, for some students, be the only time during their lifetime that they will be able to "live" this experience.

As the teacher, you now have a dual role. During the classroom study portion of the course, your role is the usual teacher function, that of directing the students' efforts as they study about industry. Reading assignments, research, reports, lectures, class discussions, and field trips should be incorporated in this learning experience. There is a wealth of resource people within the community who can be called upon to provide authorization and additional insight into the different phases of industry as they are being studied. Make use of such resource personnel.

It is during the time that the students are operating their small industry that you will find yourself faced with a new role, that

of teacher-advisor. Hopefully, you will let the students organize and manage their own industry. They will provide the leadership, make the decisions, do the work, and share the rewards of their efforts. You should stay in the background, being ready to give advice and suggestions if requested, as a consultant. During the first few days you will have to orient your students about this learning approach of studying industry. Your objective should be to help your students organize their industry and elect officers as quickly as possible. Then let the students have a free hand.

The topic of evaluation is usually reserved for the last few pages of a text or manual and generally is concerned with measuring achievement or the effect some completed endeavor has had on the students. In most cases evaluation of this type, coming after the experience is over, is done in an attempt to justify a program or as a basis for determining grades for reporting student progress. Certainly evaluation for these purposes has its place, and you should begin planning an evaluation program as your class begins its study of industry. Always keep in mind the objectives of this student endeavor, as the evaluation should serve as a measurement of how well the objectives are being met. Knowledge learned in the classroom can easily be evaluated through standard testing procedures. The skills, knowledge, and attitudes developed during the laboratory activities might best be evaluated by both objective testing and direct observation by the teacher-advisor. The students should, of course, be informed during the orientation of how their performances will be evaluated. But hopefully, however, you will consider the process of evaluation in a much broader sense. Evaluation can be used to the benefit of your students now — not after the program has been completed. It is for this reason that this topic is presented here rather than at the end of the manual.

Evaluation can be an essential part of any learning situation. Stopping for a minute to take stock of what has just been done, correctly or incorrectly, can be a meaningful experience for your students. As the teacher-advisor, you should attempt to instill within all of your students an "evaluation consciousness" as they undertake their work. Whether a task is being done by the entire class, a group, or a single student, evaluation should be made a part of that task; and it should take place while the task is being done — not at the end of the semester.

What is evaluation consciousness? It is pausing immediately after accomplishing a task and thinking about what has been done for the purpose of self-improvement. Was the task properly planned? Were all possibilities considered before undertaking the task? Was it done in the most economical manner? Did problems arise which had not been anticipated? If the tasks were repeated, what changes would be made? These are the kinds of probing questions which should be asked and answered each time a task is done. This process of evaluation should become an automatic response. When this happens, learning takes place whether the task was performed correctly or incorrectly. Much can be learned from mistakes, providing the actions are analyzed and corrective measures thought out. None would disagree that the development of this trait is within the stated objective of the school — preparing youth for the future.

Helping students to develop this trait is not accomplished by means of formal testing every time some task has been completed. It is brought about only by the teacher-advisor taking a sincere interest in the work being done by the class. As small tasks are nearing completion, the teacher-advisor should be ready to discuss the outcome with the student or students involved. True, it is extra effort at first; but if

started correctly, the entire class will soon pick up the idea and make it a part of their work procedure. When this happens, learning is taking place.

This student industry concept may be approached as either a manufacturing or a service-type industry. As the teacher-advisor, you should select the one which will provide the best opportunity for obtaining the stated objectives of the course. This decision must be reached prior to giving your class an orientation to the enterprise endeavor.

Although Part Two of the manual was written primarily as a guide for students establishing a manufacturing industry, the majority of the information applies equally as well for those providing a service rather than producing a product. The last chapter in the manual concerns the service industry and points out the changes necessary, both in organization and operation, if the student endeavor is of this type.

Prior to beginning this endeavor, find time to carefully explain the program to your school principal. The principal should be made aware of the objectives of the program, as well as the expected outcomes for the students involved. As it may become necessary to raise additional capital through the sale of stock, the principal must be informed because of his overall responsibility for the actions of all students under his jurisdiction. Hopefully, through your invitation, the principal will become a frequent vistor to your class and laboratory to watch the progress of this student endeavor.

A word of caution seems appropriate. This activity should not be undertaken by the dogmatic teacher who is unwilling to let students organize, administer, discuss, display leadership, and run their own business. Nor is it for the teacher who believes that students must be led by the hand in every step. The role of the teacher becomes that of consultant, resource person, counselor, and suggestion-giver; the students run the show. And they will do just that if given the chance. You may be pleasantly surprised at the interest, enthusiasm, hard work, and critical thinking your students demonstrate through involvement in their own business endeavors.

PART ONE

A STUDY OF INDUSTRY

BEST COPY AVAILABLE

BUSINESSES IN THE UNITED STATES

The Free Enterprise System

Do you know the meaning of the words "Free Enterprise System"? You have heard these words many times before on the radio or television, but have you ever stopped to consider their meaning? According to **Webster's Seventh New Collegiate Dictionary**, the term "free enterprise" means: "freedom of private business to organize and operate for profit in a competitive system without interference by government beyond regulation necessary to protect public interest and keep the national economy in balance." This means simply that if you want to go into business, there is legally nothing to hold you back.

Not every country has a free enterprise system. There are countries where a person cannot go into business. These countries have a form of government called communism. Communism, according to **Webster's Seventh New Collegiate Dictionary**, is a "theory advocating elimination of private property" and "a system in which goods are owned in common and are available to all as needed." This means that if you lived in a country that operated under this form of government, you could not go into business for yourself because the government would own all of the businesses. In other words, it would be against the law to start and operate a business in a country controlled by communism.

Since you live in the United States, you can start a business any time you want to. About one-half million people do just that every year. But before you go into this endeavor, there are a few things you had better know about this thing called business.

What Businesses Do

In the United States there are more than 11 million business firms ranging in size from small one-man operations to giant corporations employing hundreds of thousands of workers. Small or large, they all have one thing in common. They all provide goods or services. Think about this for a moment. Can you think of any business that does not do one of these two things? You cannot because this is what business is all about. All businesses either produce or make goods or products which are sold to the public or perhaps are sold to

This crop duster pilot is in business for himself. When not flying, he is busy getting new contracts with farmers in nearby areas.

BEST COPY AVAILABLE

Thousands of men and women work in this plant.

another business which in turn sells to the public, or they sell or provide a service of some type.

A good example of this cycle can be seen by looking at a product such as your family automobile. Most likely your car was purchased from a local automobile dealer (a business) who certainly did not make the vehicle himself. It was probably made by Ford, General Motors, Chrysler, or American Motors (all businesses) and sold to the dealer who then sold it to your folks. What happens when a new set of tires is needed for the car? The tires are bought from a local tire store (a business) which has to purchase them from a tire manufacturer (another business).

Automobiles, such as this Ford L.T.D., are made at assembly plants but are sold by local dealers.

Many businesses do not produce products or sell them. They specialize in providing services. Examples of such businesses and professions include advertisement agencies, hospitals, laundries, tax consultants, car washers, barber shops, dentists, doctors, lawyers, and hundreds of others. Sometime when you have a phone book in your hand, take a look at the yellow pages. You will be amazed by the number of businesses listed which deal with either goods or services.

The Importance of Businesses in the U.S.

Businesses are more than just a little bit important in our system of economics in the United States; they are the system. Our country, operating on the free enterprise system, depends on businesses to supply all of the material things we need and want. Our homes, furniture, food, clothing, automobiles, televisions, radios, books, magazines, newspapers, sports equipment, and everything else we use come to us from businesses. When considering how important businesses are in this country, you might think for a minute of what would happen after you had eaten all of the food from the refrigerator or after the gas tank in your car became empty. Businesses are vital in our free enterprise system.

Reasons for Going into Business

The answer to the question of why people go into business is quite simple. People go into business to make money, or as it is referred to in business terms, to make a profit. All businesses, large and small, operate for the purpose of making a profit. They have to make a profit, or they will soon be out of business. Of course, along with the desire to make a profit are other motives as well. Many people who enter into business like the independence that comes with being their own boss. Others feel they have a real contribution to make to the public and believe that this can be done best by being in business for themselves. Others invent or discover new

BEST COPY AVAILABLE

products or new services which necessitate starting a new business to get that product or service before the public.

Let's take a close look at an example of one individual and see why and how he starts a business. Suppose we use as an example a 35-year-old carpenter who starts a contracting business. Perhaps this person learned carpentry by going to a trade school, or maybe he went through an apprenticeship program. After completing this training, he began working for a house building contractor as a carpenter's helper. Working his way up to a carpenter, he now has about 15 years experience building houses. With this much experience he certainly knows the carpentry end of building a house, but he also learned a lot of other important things as well. He knows where the contractors whom he has worked for buy their building materials and which building supply business gives the best prices. Other trades besides carpentry are needed to build houses, such as plumbing, roofing, brick masonry, and heating and air-conditioning. He also knows the people in these areas because he has worked on many jobs with them.

One day our carpenter decides that instead of working for someone else as he has been doing for all these years, he will go into business for himself. He learns of someone who wants a house built. He figures how much money he can build the house for and bids on it (quoting a price that he will build the house for), and he gets the job.

He is now in business for himself. On this first house he does most of the carpentry work himself, and sub-contracts the plumbing, air-conditioning, etc., to some of his friends. He also does all of the buying of building materials as well as the supervising and coordinating of all the work. After completing this house and maybe one or two more, he stops doing the carpentry work himself and hires other

Many people start new businesses each year.

carpenters. He now devotes all of his time to estimating, buying materials, and supervising the work of his men.

You may be wondering what happens if the carpenter does not do well in the contracting business. Suppose he discovers that the profits he receives for building a house are less than he used to make as a carpenter working for some other contractor. This discovery could and does happen. In this case, he goes out of business and goes back to doing carpentry work for wages.

Remember, about one-half million people each year in this country start new businesses. Certainly a large number of these also go out of business that same year.

Ownership of a Business

When we talk about a business, the question of ownership quite often is asked. When you have a business, to whom does it

belong? The answer often depends on the type and size of the business. Just about all of the businesses in the United States are organized for ownership purpose in one of three ways. Let us look at these three types of ownership, since the type of organization determines who owns the business.

Types of business ownership:

1. Proprietorship — owned by one person
2. Partnership — owned by two or more people
3. Corporation — owned by stockholders

One of the first things that a person or group of people must decide upon before going into business is the question of ownership. This question is very important when you remember that the reason for going into business to make a profit. Not only does the owner have the business, he also gets the profits from that business. Now everybody knows that if you make a profit of $100.00, the least number of times you divide that money, the more you have. If the business is a proprietorship, the owner keeps the $100.00. In the partnership, assuming it is a fifty-fifty partnership, the $100.00 turns out to be $50.00 for each partner. And if the business is a corporation, the profit is divided hundreds or thousands of times, depending on the number of stockholders. So why doesn't everybody going into a business choose to have a proprietorship? There are many reasons why they do not.

Going into business requires a certain amount of money, called capital, and also the know-how needed to do something. Maybe the man with the know-how does not have the capital needed to start a business, so he has to find someone else, a partner who can provide this capital. Or perhaps he has half of the required capital but still must find a partner to supply the other half needed to begin the business. If the business is farming, then certainly land is needed to grow crops. A lot of partnerships in farming are carried on by one person who has the know-how but no land, and another with the land but without the knowledge or time to farm the land.

Other businesses may require so much capital to establish that one or two people cannot afford the operation. In this case the corporation which has hundreds of stockholders may be the only solution. So you can see that even though the proprietorship sounds best when talking about dividing the profits, it may be necessary to have a partnership or corporation if you are going to make any profits at all.

Legal Concept of a Business

Before starting a business, there is a legal concept which should be completely understood. In a proprietorship, the business becomes a part of the personal property of the individual who is the owner. If the business is a partnership, it becomes the personal property of the two or three partners. There is no problem yet, but suppose something happens. Suppose at the end of a certain time you have not made enough money to make a profit; but you have a lot of bills to pay for materials purchased such as rent, utilities, labor, etc. What happens if you cannot pay these bills? Most likely you will have to sell everything you have in the business to raise enough money to pay the bills. But suppose that does not bring enough money to make all your payments. Your creditors can file claims against your personal property. You can end up selling your house, your car, and anything else you own trying to raise enough money to pay

BEST COPY AVAILABLE

these bills. You assume a lot of liability when you own a business. In a partnership, this liability is shared. You divide the profits; but if there are no profits, you have someone to help share the expenses.

Other things can also hurt in a proprietorship or partnership. Suppose as a result of an accident on your property someone files a suit against the business. This can

and quite often does cost more than the business is worth. There is a way to solve this liability problem, a way in which only the money that has been invested in the business is lost if the concern is not successful. It is a legal process called incorporation. Through this process the owners only risk the money they have invested in the business. Their personal assets are independent from the business. The process of incorporating a business is fairly standard. A charter is applied for and secured through the office of the Secretary of State. Many people hire an attorney to handle this legal matter for them. There is an expense involved in incorporating.

Summary

Goods and services in the United States are produced by private businesses operating in our free enterprise system. You and I depend on these businesses to supply us with all the material things we need.

One of the main reasons for people going into business is to make a profit. Many of course do, but about half of the new businesses started fail during the first year.

Practically all of the businesses in the United States are either proprietorships, partnerships, or corporations. Each has certain advantages and disadvantages. One big advantage of the corporation is that its owners risk only the money they have invested in the business, should it be unsuccessful.

Words and Phrases You Should Know

Free enterprise system
Communism
Products
Services
Profit
Sub-contract
Proprietorship
Partnership
Corporation
Capital
Incorporation

Discussion and Research Topics

1. Discuss the meaning of the free enterprise system.

2. What is meant by regulation necessary to protect the public interest?

3. Identify some of the reasons for business failures.

4. Discuss what would happen if the petroleum industry stopped completely the production of petroleum products.

5. List and compare the advantages and disadvantages of the various types of business ownership.

6. Select three businesses in your community and find out the type of ownership of each.

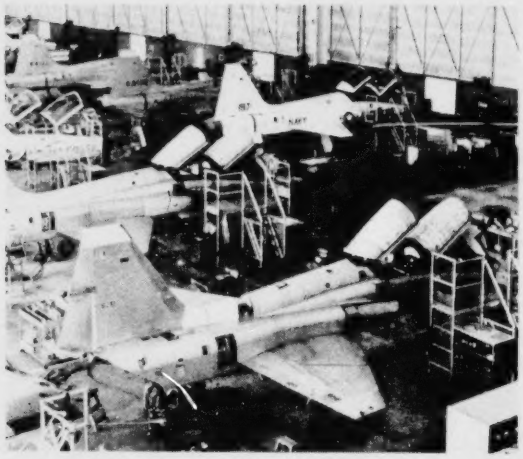
BEST COPY AVAILABLE

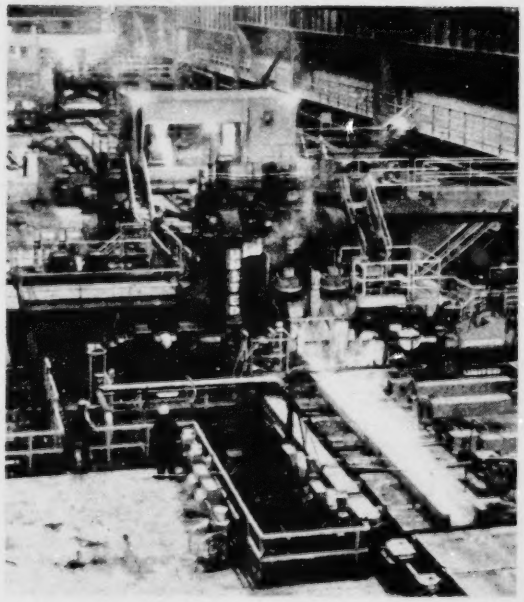
RAISING CAPITAL

All businesses, large or small, must have capital (money) in order to operate. Businesses which are in operation depend on money received from the sales of their goods or services to pay for the expenses of production. For example, General Motors sells automobiles, and a large portion of the money received from the sale of these cars pays the expenses of manufacturing more automobiles. But what about the business that is just starting? It cannot depend on sales to meet its initial expense because it has not produced anything to sell. What a new business needs is working capital, which is money required to operate until it can depend upon sales receipts to overcome its expenses. Perhaps we should take a look at the many things in business for which working capital is needed.

Let us assume that we are starting a business which will manufacture and sell furniture. Certainly we need a building in which to manufacture this furniture. We can have one built, or maybe we can rent a building. Either way, it is going to cost money. And do not forget the maintenance and utilities on the building. If the furniture is to be made from wood, a lot of woodworking machines have to be bought and also some hand tools as well. Some materials to work with such as lumber, glue, screws, and finishing supplies are also needed. We need to hire a crew of workers to build the furniture; but the workers will spend some time getting the building, machines, and supplies ready before they ever build a piece of furniture. They have to be paid for this "getting ready to work" work. Another expense will involve advertisement to let people know what we are going to build and sell. We also need an office staff to handle the paper work connected with the business. We will have to give our competitors some business by buying furniture for our office staff. Remember, we have not produced anything yet. If we are going to deliver, and this is something everybody expects these days, we must buy a truck or two. Perhaps a lot has been overlooked in our list of items needed to start our business, but hopefully you get the idea. We just cannot decide to go into business one day and start manufacturing and selling the next day. It takes time and a lot of money to set up a business.

BEST COPY AVAILABLE

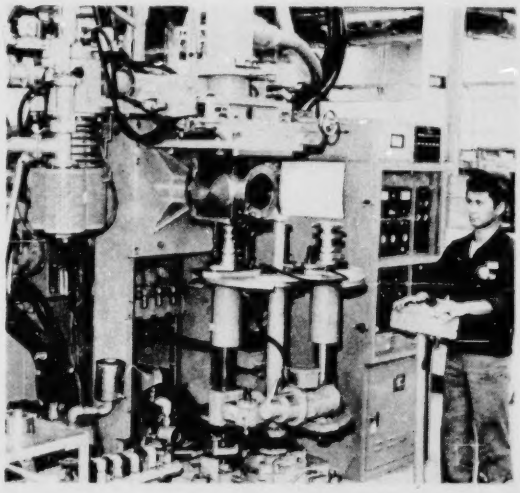




These pictures give an indication of the vast amount of floor space, machinery, and equipment required in some types of production.

Working Capital

As previously mentioned, the money needed to meet expenses until the receipts from sales overcome these expenses is called working capital. Many factors determine how much working capital is needed for each new business started. The size of the business, the type of product to be produced, the time required to set up for production, the time required to produce the product, a source of raw materials, and the availability of trained workers are a few of the factors that determine the amount of working capital required. The fact that so much working capital is needed is obviously overlooked by many people who start businesses. This factor accounts for a major portion of new business failures each year. Perhaps the people believe they can start depending on sales receipts sooner. Many times it takes much longer to begin production than originally planned.



Equipment such as this Electron Beam Welding machine can cost hundreds of thousands of dollars.

Where the Money Comes From

The sources from which a person starting a business can get money are controlled by the type of ownership of the business. In a proprietorship, the owner can depend only upon the money he has to invest in the business plus whatever money he can borrow. Borrowing money can be a problem for the single-owner business because all lending agencies (banks, mortgage companies, finance

BEST COPY AVAILABLE

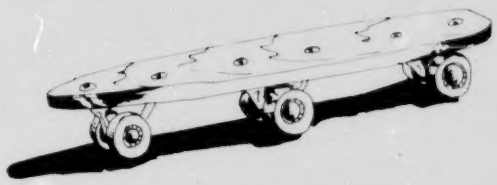
companies, etc.) are well aware of high risk inherent in privately owned businesses. Because of this fact, lending agencies usually will not lend any more money than the individual has collateral to back the loan. In many cases, they will not lend any money on the business itself, but will lend money to the individual owner as a personal loan if he puts up collateral such as land, a house, a car, or an insurance policy. This way, the lender has something to get back in the event the business fails.

When the business is owned by two or three people, a partnership, the source of money is the same as that for the proprietorship, except that two or three people usually have more money to start with than does one person. Two or three people also have more collateral to put up against loans to increase their borrowing power.

It has long been recognized that one of the disadvantages of proprietorship and partnership businesses is the limited borrowing ability. This disadvantage does not affect many small businesses simply because they may not need large amounts of money for working capital. Where the working capital required to begin a business runs into large figures, however, the limited borrowing disadvantage usually results in the business being established as a corporation. Like other forms of business, the corporation has certain disadvantages; but limited borrowing power is not one of them. In fact, one of the most important advantages of the corporation form of business is its unlimited borrowing ability.

Corporation Stock

Perhaps the best method of explaining corporation stock is to examine a new business venture and see the important part it plays. Let us assume that a man makes a new toy for his children. This toy is a new type of skate board, a board with



three skate wheels attached to the bottom. His children love it, and so do the kids in the neighborhood. Many parents ask where the toy was bought, as they want one for their children. Other people see or hear about this toy and also make inquiries. Situations similar to this provide the idea that encourages many people to begin businesses.

Our skate board inventor, realizing he has a good product and that there is a potential market, decides to begin a business for manufacturing and selling this product. After careful study and planning, he estimates that the working capital needed to rent a large garage, to purchase machine materials, and to hire workers and salesmen will amount to $10,000. His big problem is that he doesn't have $10,000. After talking with bankers and other lending agencies, he discovers they will not lend him the money. They claim the idea sounds too risky.

Our inventor, however, does not give up. He applies for a charter to incorporate from the Secretary of State in the state in which he lives. When his charter is received, he is in business. His new business, Skate Board, Inc., still does not have the $10,000 needed to begin production; but it does have the legal right to sell shares of stock. Stock is ownership in the company.

Deciding on Value

Since Skate Board, Inc. needs $10,000 to begin production, it must raise this amount of money. Actually, it does not matter if two shares of stock in the company are sold for $5,000 each or if ten shares are sold for $1,000 each. The company ends up with the required amount of money. Remembering the bank would not risk its money on the business, it is assumed it will be difficult to find a few people willing to risk several thousand dollars in the business. It is suggested the stock be priced as low as possible, since more people are willing to risk a small amount of money with the chance of making a profit.

Our inventor decides to sell shares of stock in Skate Board, Inc. at $20 a share. To raise the required $10,000, 500 shares of stock are sold ($20 x 500 = $10,000.) Each person who buys a share of the stock owns 1/500 of the business. Some people buy several shares, and so they own 1/500 of the business for each share they buy.

Buying and Selling Stock

Most stories have two sides. The inventor of Skate Board, Inc. sold 500 shares of stock because he needed to raise $10,000 to begin production. The company got the required money, and the inventor is now manufacturing and selling his product. But what did the people who bought the stock receive for their investment? They got a little piece of paper called a stock certificate which they could resell for $20, or perhaps for more or less than $20. Here are a couple of things that could happen to this business.

The company could be unsuccessful. Production costs due to increased prices of material and labor could run higher than originally predicted. Sales may not be as good as was thought. All of these possibilities indicate that the company may go bankrupt. In this case, the business closes and everything the company owns, machines, materials, and finished products, are put up for sale. With this money all outstanding bills are paid and whatever money is left goes to the stockholders. It could be that each stockholder may get $5 or $10 or even less back for his original investment of $20. Situations such as this do happen. When the company loses money, so do the stockholders because they own the company. But not all businesses go bankrupt. What happens if Skate Board, Inc., is successful?

The company has no delays in getting into production. Because of good planning and management, production costs and schedules are just what they were predicted. Sales, expected to be somewhat slow at first, are just the opposite, exceeding all expectations. At the end of one year, the company makes a profit of $3,000. The board of directors (elected by the stockholders) decides to use $2,000 of this profit to buy some additional machines which will allow for increased production. The board also decides to use the remaining $1,000 of the profits to declare dividends to the stockholders. This means for each share of stock a person has bought, he will receive a dividend check in the amount of $2. This amounts to a 10% profit for the year on the $20 investment. How does this 10% return compare with interest rates paid by banks or other saving programs? A person can expect between 4 and 5% interest on savings accounts. So the stockholders of Skate Board, Inc. earn twice as much as they could have, had they put their $20 in a savings account; but they took a risk. Suppose the company had gone bankrupt, as was stated in the first example. No risk is involved in the bank savings because the money is insured.

The 10% return in the form of a dividend is not all that the stockholders gain. Remember, each share of stock was valued at $20. Five hundred shares were sold, so the company was worth $10,000. But

now the company is worth $12,000, $10,000 plus $2,000 from profits going back into the company for expansion. Since the number of shares of stock is still 500, this means that each share is now worth $24. So in addition to the $2 dividend each stockholder received, his share increases in value by $4. Of course, the only way to get this $4 gain now is to sell the share of stock. But why sell? Maybe the company will do as well next year and the stock will increase in value again.

From this example, it should be clear why stocks are bought and sold. To the company it is a method of getting the money they need. For the individual who buys stock, it is a method of making money. It is true that some risk is involved, but along with this risk is the chance to receive a higher return than can be gotten in a no-risk investment such as a savings account at a bank.

Summary

In our system of free enterprise, businesses organize and operate for a profit. Businesses produce all of the material goods and services used by the American people. About one-half million new businesses are started each year in the United States. Most businesses are organized as proprietorships, partnerships or corporations. Although corporations represent only about 10% of all businesses, they produce more than 75% of all manufactured goods made. There are advantages and disadvantages to each type of business organization. The best advantages of the corporation are limited liability and unlimited borrowing power.

Businesses which are just starting need working capital until they can depend upon the money received from sales to meet their expenses. In the corporation, this money is raised through the sale of stock. Stock represents ownership in the corporation.

Words and Phrases You Should Know

Capital
Working capital
Lending agencies
Collateral
Limited borrowing ability
Unlimited borrowing ability
Potential market
Corporation Stock
Bankrupt

Discussion and Research Topics

1. List and discuss as many items as you can for which you would need capital if starting a business.

2. What sources are available to people who need money?

3. What interest rates are paid on savings accounts in your community? By whom are the accounts insured?

4. What are some of the occupations which are concerned with capital (money)?

ORGANIZING THE BUSINESS

Importance of Organization

Every endeavor needs some organization. It does not matter if we are talking about a business, a football game, or even a family picnic; organization is needed if things are to run smoothly.

Suppose your family decides to go on a picnic Saturday. The decision itself requires some organization because it will be necessary to determine if everybody can go this Saturday or if the picnic should be postponed until next week. Is Dad free this Saturday? Is there work at the office or an important repair job around the house that has to be done? Are there any dental appointments for the kids or dancing lessons? Is there a football game on TV that everybody has been waiting to see? This decision to go on the picnic requires some organization. Somebody has to make sure there is not a conflict. You had better get the car ready and check the gas and oil. And let's not forget the lunch. Are you planning to take bathing suits and towels? It could be that these things will be taken care of without any fuss, and maybe because no one makes a "big deal" out of it you think there is no organization. When there is good organization, everything seems to fit together.

What organization is required in a football game? A lot is required, and most of it takes place before the game is played. The coaches (the leaders of the organization) have to get their players ready. This preparation involves teaching, practices, scouting, reviewing game films, developing a game plan, and more practice. Now, hopefully, the team is ready to play the game. Obviously, someone must decide which play to call. Most football teams have dozens of plays to choose from, and all will agree that all eleven men on the offense should be running the same play at one particular time. More organization is needed so that when one player calls a play, he and the other ten players run the same play. A business is no exception. Organization is needed because certain things have to be accomplished which require organization. Decisions have to be reached, problems have to be solved, orders must be given to the worker, work must be done; and in order for the men to work, they must have the tools and materials necessary to do their work. Without proper organization, a business is the same as the football team running eleven different plays at the same time.

The Right Organization for a Business

The right organization for a business is the type that gets the job accomplished. Since businesses do different things and are of different sizes, there must be different types of organizations. Some forms of organization call for a board of directors to make decisions and a president to carry out or put into effect these decisions. This is fine for some companies, but what is the small one-man business owner to do? He does everything himself. Since he is the "chief cook and bottle washer," he has to make his own decisions and carry out the work as well.

There are, however, some common methods of organization that corporations use, particularly at the top level. Corporations are controlled by a board of directors that is elected by the stockholders. In the election of these board members, each stockholder has one vote for each share of stock he owns. There is no set number of people that must be on the board of directors. What each corporation wants are board members with knowledge and experience in business affairs who can provide the leadership needed to steer the organization on the road to success. Of course, as the number of people on the board increases, the amount of knowledge and experience available to the corporation also increases. But there is the other side of the coin to consider. The larger the number of people on the board, the harder it is to reach a decision. Many corporations hold the board of directors to between nine and eleven members. This size board seems to work well.

The Need for a Board of Directors

As has been mentioned before, the stockholders own the corporation. Each person owns whatever percentage of the company that his stock represents. In the corporation used before as an example, Skate Board, Inc., each share of stock represented ownership of 1/500 of the company because 500 shares of stock were sold. There could actually be 500 owners of this company, but more than likely many people bought more than one share of stock. There could be 50 to 75 people who own Skate Board, Inc., each owner owning 1/500 of the company for each share of stock which he bought. You might ask that if these people own the company, why don't they make all the decisions? The answer is simply because it would be impossible to get all of the people together every time a decision has to be reached. And besides, these owners may know nothing about running a business. So it is the practice to elect a board of directors to oversee the operation of the business. This board elects someone to serve as chairman of the board.

This type of organization is thought of as being similar to the method used by our government. People are elected to high positions in the government (President, Vice President, senators, representatives), and they represent the people of the country. The decisions they reach and the things they do are supposed to be in the best interest of the country. If they fail to perform their jobs the way the people wish, they are replaced through our system of elections. The people run the country through other people who are elected to represent them. Our corporation board of directors represents the stockholders, and their decisions and actions should always be in the best interest of the company.

What the Board Does

The board of directors makes decisions necessary to steer the corporation, and it also establishes a policy which directs the operation of the corporation. In every business there are hundreds of decisions to be made each day. Which of the five applicants for the job as truck driver would you hire? Should these two pieces of metal be welded together or should they be fastened with a bolt and nut? Do you order some supplies needed next month now, or should you wait till next week to order? These and similar problems come up every day in business, and a decision must be reached in each case. But decisions such as these are handled by the individual departments and not by the board of directors. Such routine problem-solving and decision-making is important to the department, but it does not affect the entire corporation.

Then what kinds of decisions does the board make? The board deals with big problems that affect the overall operation of the corporation. Should the business

expand? Should more stock be sold to raise additional money needed for expansion? Should the company consider introducing a new line of products? Should some fringe benefits for employees such as hospitalization insurance, group life insurance, sick leave, and vacations be provided? Should the corporation declare dividends this year? If so, how much? Decisions such as these will affect the entire organization,and they can only be made at the very top level which is the board of directors.

How Decisions Are Reached

Decisions are reached by the board of directors after carefully studying the facts concerning a particular item. Let us examine one item and see the process that is involved in reaching a decision. Fringe benefits for the employees have been mentioned; so let us take a part of that package, group hospitalization insurance, and look at it closely. Before the board of directors can say "yes" or "no" to this question, it needs a lot of information. In most cases, this information is prepared and presented to them for consideration. One of the people who is involved in preparing information is the personnel director. He may be asked to secure bids from insurance companies to get price details for such insurance coverage. The vice president of finance may be asked to make projections concerning the cost to the company if the decision is made to pay a percentage of the insurance from company funds. Someone may be assigned to get information from the workers concerning the number already covered with individual policies, how many want the insurance, and what they are willing to pay for it. When all of this information is gathered and presented to the board of directors, the members can study it and come to a decision. The decision is based on facts and is in the best interest of the company. If the decision is "yes," someone else puts it into effect, not the board of directors. The board makes the decisions while someone else does the work.

The President and Other Major Offices

Since the board of directors only oversees the operation of the business, some other group must attend to actually running the company. The board appoints people to fill the job of president of the corporation and also the other major offices such as vice presidents in charge of the various departments. The board decides on the salaries and desired qualifications of the officers and then looks for the best people in light of their training, background, and experience to perform the duties involved in these various jobs.

The people selected for these important positions manage the corporation. The president is responsible for the entire business, and the vice presidents are responsible for the operation of their various departments. These are not the only people in the company that have leadership roles. The various departments are broken down into sections, with each section having a head or chief who has control of the men and the work of that particular unit.

Chain of Command

The question may be asked, "Why do we need all of these vice presidents and lesser department and section heads?" The answer to this lies in a phrase called "chain of command." You may have heard this phrase used before. This phrase was first used in the military, but it has now become part of the business vocabulary. What is meant by "chain of command"?

During the course of a normal working day, the workers are given instructions about what work they are to perform. The instructions given at the start of the work day may change before lunch time

because the work may be completed or perhaps something more important must be attended to. Considering the size of some companies, it is impossible for the president of the company to give all these instructions to each of the workers. But he can give instructions to the several vice presidents who in turn can pass these on to section heads who can instruct the workers. The section head may only have one or two dozen men under his charge.

From the worker's point of view, there are problems and questions that arise during the day that require solutions and answers. It's not practical for the section head and the other thousands of workers to run to the president each time they need a question answered, but it is practical for the worker to ask his section head who can furnish the answer. Or if the section head can't provide the solution or answer, he can go to his supervisor, learn the answer, and then relate it to the worker. As you can see, chain of command has a lot to do with a sort of communication system within the organization. It is a method of getting information and instructions from the top to the bottom (from the president to the worker) and also from the bottom to the top (from the worker to the president).

There is a chain of command in the school systems of our country. Since the school systems are organized very much as a business would organize, let us look at them for a minute. In most cases, our schools are controlled on a city or county basis by a school board, just like a board of directors of a business corporation. This school board makes all of the major decisions and establishes policies for the operation of the schools under its control. They oversee the operation of the schools, but they don't run them. They appoint or hire a superintendent (like the president of a business corporation) whose duty it is to carry out the decisions and policies of the school board. Every time something is to be done or the students are to be informed about something, it is impossible for the superintendent personally to tell every student in the school system. He can, however, inform all of the students through the chain of command. He passes his instructions to the principals of the various schools. The principals then tell the teachers in their school, and finally the teachers tell the 20 or 30 students in their rooms. It sounds like a roundabout way of getting a message to someone, but it usually works.

It has become a common practice in high schools to let students have a voice in the operation of the school. Does this mean that each student can go to the principal's office and tell him how to run the school? You know that the answer to this is no. But in a way, through the chain of command or lines of communication, he can. The system works like this. Students can voice ideas and suggestions to their homeroom student representative on the student council. The representative passes these on to the student council. The student council, meeting with the principal at regular meetings, conveys the suggestions, ideas, and gripes of the students to the principal for action. Once again, it sounds like a roundabout way of getting something done, but it usually works.

Authority and Responsibility

This chain of command is also a system of delegating authority and placing responsibility on certain individuals so that the work of the organization is accomplished. No one man in a large organization can do everything himself. Nor can one man personally supervise the work of thousands of employees. The president of the corporation must delegate the authority and the responsibility for the management of the various departments to the vice presidents. They are given the authority to do whatever is necessary to see that the work is done as efficiently as possible. They are also responsible for the quality of the work. If the

work assigned to the department is not done properly, the vice president in charge of that department must answer to the president. The president, however, is responsible to the board of directors for the entire effort of the corporation. Even though the authority and responsibility for doing a job are delegated to someone else, the president is still responsible.

The vice presidents, however, still have the problem of having too many personnel to personally supervise. They must subdivide the departments still more and place individuals with the authority and responsibility in charge of these smaller units. It is now easy to supervise these smaller units and also to judge the quality of the work being done. Where work is being done well, proper acknowledgement and rewards are given. Where it is not, quick action must be taken to correct conditions which result in poor performance. Perhaps the section does not have the equipment or personnel required to do the job. In that case help can be given to correct the condition. But if the condition results from failure on the part of the individual in charge, the section head, to properly perform his job of supervising the workers, then he should be replaced. The vice president cannot pass off poor work within his department by saying his section head is not doing a good job. He is responsible for the entire department, and if he cannot manage it the president needs to look for a new vice president before the board of directors begins to look for a new president.

Summary

A corporation is owned by stockholders who elect a board of directors to oversee and steer the organization. This board makes decisions and sets policies which are carried out by the major officers of the corporation — the president and vice presidents.

Through a system referred to as the chain of command, instructions and information are passed from the very top of the organization to all employees of the corporation. Through a reverse procedure, questions which face the worker in performing his duties are answered and problems are solved.

The president is responsible to the board of directors for the operation of the corporation even though he delegates authority and responsibility to the vice presidents. These vice presidents also delegate authority and responsibilities to individuals within their departments. They are still responsible, however, for the operation of their department.

Words and Phrases You Should Know

Board of directors
Chain of command
Authority
Responsibility
Delegate

Discussion and Research Topics

1. What is the governmental organization structure of the community in which you live?

2. Discuss the difference between authority and responsibility.

3. Select one of the larger businesses in your community and investigate its organizational structure.

4. What types of occupations are required in the organizational structure of a business, a community, and a school system?

MARKETING RESEARCH

What Marketing Research Is

All businesses which manufacture a product or provide a service are concerned with how well that product or service will sell. As was mentioned before, businesses operate to make a profit, and this is impossible without sales.

But here is something to consider. Where in the business picture do sales come into play? Actually, sales are last in the business cycle. Do you remember how a business is started? Someone has an idea for a product, and he goes into business. The product is then manufactured, and finally the product is sold. The company receives money for its efforts through sales.

Now this presents a real problem because there are so many things to consider and do before anything is sold. And all of these considerations and the things that are done must come before actual sales are made. How many machines should the company purchase? How many workers are to be employed? How many production lines should be set up? Will production be done in one shift, or will work be carried on around the clock? The answers to these questions determine the rate of output (how fast the product is produced) and the quantity produced. Keep in mind that these are important considerations, and they are important because we are talking in each case about spending money. These decisions are made before sales take place. It should be obvious that businesses need more to go on than just the hope that their product will sell. Many businesses go bankrupt because their hope does not become a reality.

There is a process by which sales are studied before they are actually made. This process is called marketing research, and it deals with a study of the market to determine what will sell and at what volume it will sell. It is actually a process of determining if a product will sell, and if so, how many can be sold. Businesses today spend a great deal of money on marketing research; and in most cases, it is money well spent when one considers that the shortest road to bankruptcy is producing a product that cannot be sold.

Marketing research is a broad subject that can be divided into three topics. These are:

1. Market analysis
2. Market survey
3. Sales forecast

Let us examine each of these topics to see what they are and how they affect the business of a company.

Market Analysis

There is a direct relationship between sales and the economic conditions of the community. This is simply because if employment is high and the people are making good salaries, they will be spending more money. When times are bad, however, people do not have as much money to spend. History recalls the depression of the 1930's. Millions of people were out of work and money was scarce. The result was that many businesses went bankrupt because people just could not af-

BEST COPY AVAILABLE

ford their products or services. The business world has learned to look closely at economic conditions, as they are a good indication of the buying power of the people. Should a business spend money for expansion? Would it be wise to introduce a new line of products? Should increased production be considered? Questions such as these face businesses each day, and their answers must take into consideration economic conditions of the community. There is no sense expanding, introducing new products, or increasing production if people cannot afford your products. The study of economic conditions is the job of market analysis.

Market analysis also takes into account how sales are doing concerning particular types of products. How are sales of automobiles, sporting goods, appliances, furniture, clothing, etc., doing? Each business is, of course, concerned only with the sale of a particular type of product it produces.

Much helpful information can be found in the government's yearly publication **Economic Data.** This source, which is a yearly census of sales in all industries, shows how sales were for a particular type of product. What sales were last year is often a good indication of what they will be this year.

Market Survey

Collecting information from people about a product's appeal, the size the product should be, the color it should be how it should be packaged, and how much money customers would be willing to pay for the item is all part of a market survey. Such information about a product is important for a business to know because it must manufacture items that people will purchase. Information such as this is often collected by sending questionnaires to people asking them about a proposed product. Another means of securing such information is by a door-to-door canvass asking certain people questions about the product. Through these methods, useful information can be secured which gives a business suggestions as to the sales appeal of its product. People are often asked what they would pay for such an item. This is of value when deciding on the price to charge for the product. Although the market survey is most useful in determining appeal, size, price, etc., it does not give any indication by itself as to the number of products that can be sold.

Information obtained from a market survey helps a company evaluate the appeal of a product.

Sales Forecast

A sales forecast is a prediction of what future sales will be for a product. From information obtained in the market analysis and the market survey, studies are made; and from these a prediction is made as to the number of products which will be sold. How good this prediction is depends on

the information received and the experience of those studying the information. At times this is very difficult to do accurately, but remember there are many important decisions made on the basis of the sales forecast. A business can lose a lot of money if it manufactures more products than it can sell. Why don't companies produce a little less than their sales forecast indicated, just to play it safe? Simply because a company also loses money when it misses a sale, and not having enough products to meet the demand is a sure way of losing sales.

Unless the business is just starting, the sales department should be able to give information helpful to market research. Salesmen, in their daily business of meeting people, quickly discover the customers' likes and dislikes regarding a particular product. Such information is given to the market research department for its consideration and evaluation. So you see that even though sales are last in the business cycle, there is a way of predicting what the sales will be before they are made. It is the job of the market research department to provide information to the decision makers of the company to give them something to go on rather than just the hope that the product will sell.

Summary

Businesses spend millions of dollars each year on marketing research trying to learn about customers' needs, what they will buy, and how much they will pay for a product or service.

Marketing research involves market analysis, market survey, and sales forecast. Market analysis is a study of economic conditions to determine how people are spending their money and what they are buying. Market survey concerns customers' likes and dislikes about a particular product. Sales forecast is a prediction of how many products can be sold.

Since the manufacturing of products sometimes costs millions of dollars, businesses need some information on how well their products will sell. Supplying this information is the job of those involved in market research.

Words and Phrases You Should Know

Business cycle
Rate of output
Market research
Market analysis
Market survey
Sales appeal
Sales forecast

Discussion and Research Topics

1. Discuss the importance of market research to a business.

2. In what ways can the general economy of a community affect sales?

3. Assume that you are about to undertake a market survey for a selected product. List the questions which you would ask about the product.

4. Discuss some reasons why actual sales could be far below the number predicted by a sales forecast.

5. What type of occupations would be found in a marketing research department?

ENGINEERING

Have you ever walked through a department store and wondered how the thousands of items of merchandise you see came into being? You could be in the sporting goods department looking at shotguns or fishing rods, in the appliance department looking at washing machines or refrigerators, or in the furniture department looking at tables or sofas. All of these products, although all different, came about in almost the same way. Let us look closely at one product, a riding lawn mower, and examine the chain of events which resulted in that product being in the department store.

Begin with a Decision

The first step in this long chain of events begins with a decision to produce the product. Such decisions usually come about as a result of one of the following reasons:

1. Customer demand for new products
2. Model or style change
3. Product requiring redesign or improvement
4. Keeping up with competitors
5. Creation of a new product

Our lawn mower company makes only push-type and self-propelled mowers. In order to keep up with their competitors, the decision is reached to produce riding lawn mowers. After the decision is reached to manufacture the new product, the next step is to design the riding mower. Design work is the responsibility of the engineering department. In designing the mower, this department is concerned with form and function. Form means what the product looks like, or appearance; and function means how the product operates, or what it is to do. Actually, two types of engineering are involved — design engineering and product engineering. Designing the appearance of the mower is done by design engineers, while designing the mechanics of the mower is done by the product engineers. How does each group do its work and what is involved?

Design Engineering

The designers begin by studying different mowers already on the market. The basic parts of the mowers are examined, and perhaps some of the more desirable features are improved upon. As they work, they make rough sketches to help formulate their thinking. Dozens or even hundreds of these sketches may be made in order to find just the right design. Designers use these sketches as a means of expressing their ideas with other designers. They often make rough models out of cardboard or clay to help them with their work. As they get closer to the final design, they make more detailed sketches, called renderings, of their best ideas.

After the designers decide on the final design, a model of that design is usually built. The model is full size or to scale, depending on the type of product, but it looks exactly like the finished product is to look, at least on the outside. Actually, the model may not work. The engine, gas tank,

BEST COPY AVAILABLE

Designers may make dozens of sketches attempting to arrive at the proper design solution.

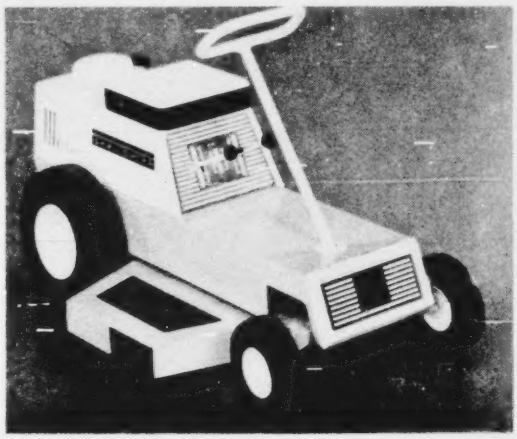
and other important parts may have been left out; but on the outside it is complete.

What is the purpose for building the model? The model is used for the presentation of the finished design to management officials who make the final decision concerning the mower. At the presentation, the designers explain the features of the mower and tell why they believe this particular design to be best. With the model, management sees exactly how the finished product will look. Assuming that management likes the design and decides it is the mower they will produce, the job of design engineering is completed with the possible exception of some minor design revisions that may become necessary to meet production problems. The model still is of value, however, as it is used for consumer surveys, for advertising purposes, and further engineering studies.

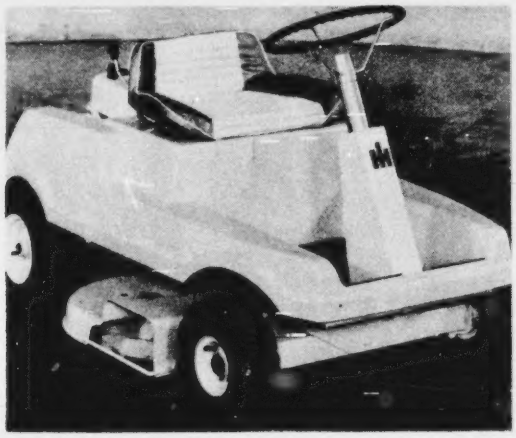
Product Engineering

With the completion of the design engineering work, it is now known exactly how the riding mower will look when it is delivered to the department store. But all the company really has is one model that does not work; and that is a long way from the 5,000, 10,000, or maybe even more that it intends to manufacture. Obviously, more work has to be done.

The next step in the development of the mower is called product engineering. The job of the people in product engineering is to make the mower work. They are concerned with the mechanical workings



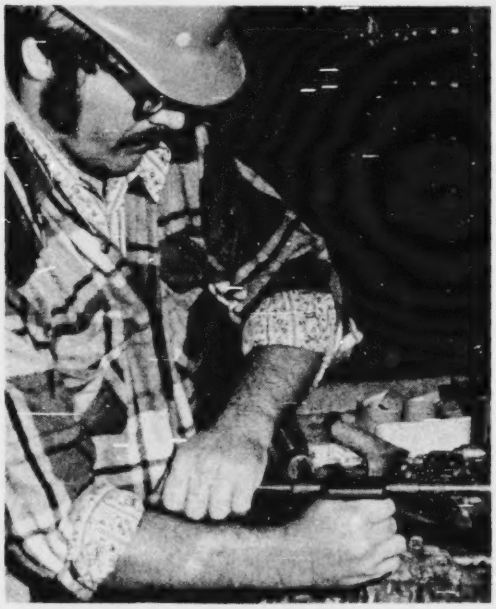
Models are used to show management how the finished product will look.



A prototype is an exact original working model of the product.

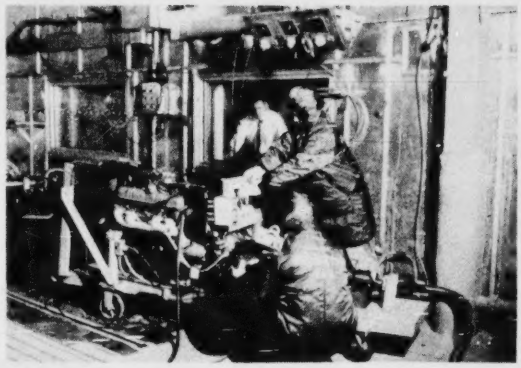
BEST COPY AVAILABLE

of the product. An engine must be selected, and means for mounting it must be designed. Gas tank, fuel line, linkage, power transmission components, steering mechanism, clutch assembly, blades, and other items must be selected or designed. This work is done without changing the already selected design or outside appearance of the mower. After this phase of the work is done, a prototype of the mower is built. A prototype is an exact original working model of the product, inside and out. This prototype is handmade

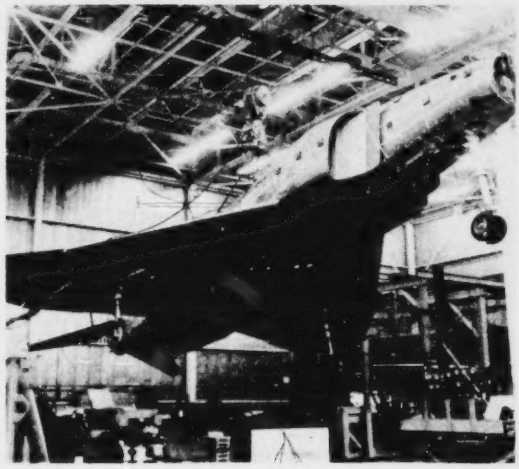


This craftsman is making a part for a prototype.

because, as yet, nothing has been set up to mass produce the product. With this prototype, tests are made to determine how the product performs. During these tests, problems and malfunctions are discovered which are corrected on this prototype. It is certainly less expensive to find the problems and correct them on this prototype than it would be to manufacture thousands of mowers and discover something that does not work. This, of course, would require changes in thousands of products.



Engines are tested to determine their performance in sub-freezing conditions.



This aircraft is undergoing a series of drop tests to evaluate landing gear reliability.

After all of the "bugs" have been worked out of the original model, the product engineering personnel make working drawings of the mower and of all its parts. These are for the production department which does its work by following the instructions on the drawings. These

BEST COPY AVAILABLE

drawings show the exact shape, size, and description of all parts of the product.

Working drawings of the prototype are made for the production department.

Product engineering still has more work to do in connection with the mower. The people in this department prepare the operating instructions, parts list, and service manual. This preparation involves technical writing and illustration drawings.

This operator's manual contains valuable information about operation, maintenance and safety.

When completed, the work of product engineering is over. There could be, however, some minor revisions needed if production problems arise.

Staff or Consultants

Now that the engineering work is completed on the riding mower, what do the designers do? They start over again on another product, if they work regularly for the company. Many large companies have design departments employing many designers because they have so much work to do. In the automobile industry, it is said the designers are working on next year's models before this year's models go into production. But many businesses, including this lawn mower company, may not have enough design work to justify having design personnel on their payroll. If this is the case, and it is with thousands of businesses, they often contract their design work to consultants specializing in this line of work. In this way, they can get the work done that they need without having such people on their payroll when there is not enough work to keep them busy at all times. Companies make use of consultants in many areas other than design. Many companies do not even do their own bookkeeping, but instead contract with other businesses that do accounting work only. Advertisement is still another area of work that is often contracted to specialists employed by advertising agencies. The volume of work in a particular area usually determines whether a business has personnel to do certain work. If not enough people are employed, the work is done by consultants on a contract basis.

Summary

Engineering is concerned with two items — form and function. Form, how the product looks, is the responsibility of design engineering. Design engineers begin with an idea and develop this idea

into a model of the finished design for presentation to management for approval. Function, how the product performs, is the responsibility of product engineering. Given the design, product engineers must work out solutions to the mechanical operation of the product. They build a prototype which is used for testing. After all necessary revisions are made on the prototype, working drawings are made to be used by the production department.

Words and Phrases You Should Know

Design engineering
Product engineering
Model
Prototype
Working drawings
Consultant

Discussion and Research Topics

1. Discuss the difference between form and function as they apply to a product.

2. What is the difference between a model and a prototype?

3. Select a product and discuss the testing which may have been done on that product.

4. Production problems can necessitate a revision in the design of a product. What could be a few of these production problems?

5. What occupations would be found in engineering work?

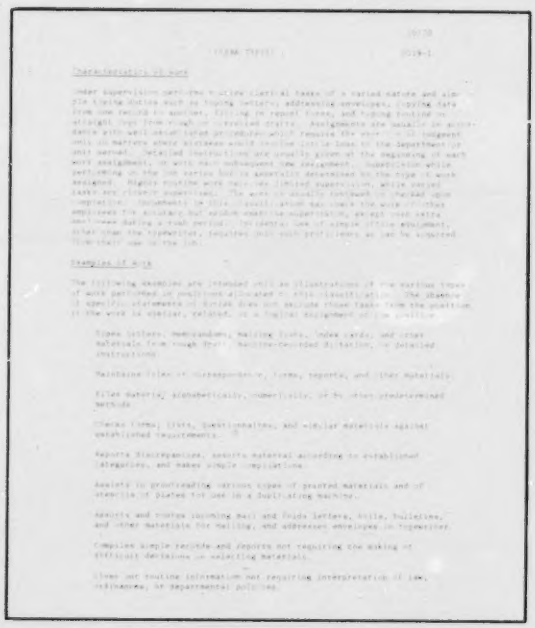
BEST COPY AVAILABLE

PERSONNEL DEPARTMENT

Staffing the organization is one of the main duties of the personnel department. This means it is the job of the people in this department to see that the workers required by the various departments within the company are available as they are needed. The main duty of the personnel department is the hiring of people to work for the company.

Job Descriptions

In order for the personnel department to know about the jobs for which it is to hire people to perform, job descriptions are written for all jobs within the company. A job description is a statement telling about the job and listing the duties required in doing that job. These descriptions are kept on file in the personnel department. If the purchasing department, for example, notifies the personnel department that it needs a clerk-typist, the workers in the personnel department read the job description to see exactly what the job is and the duties required and then attempt to hire the best qualified person to fill that job.



This job description is for a Clerk-Typist.

Hiring Procedures

Hiring people to work for the company usually involves three steps. These

Many companies employ thousands of workers. The personnel department has the job of recruiting, selecting, and inducting all of these employees.

BEST COPY AVAILABLE

steps are recruiting, selecting, and inducting.

Recruiting

When a company needs workers to fill job vacancies, the personnel department has the task of recruiting them. It notifies the employment agencies and also puts ads in the newspapers. If the job is of a professional nature, the department sends someone to nearby colleges and universities to talk to future graduates. Many companies like to promote from within; and in the case of a vacancy for a good job, they will post a notice on the company bulletin board announcing that a particular job will be open. In this way the people already working for the company have the first chance to apply for the job if they believe themselves to be qualified. This policy is good for morale within the organization.

Selecting

As people learn of the vacancy, they go to the personnel department to apply for the job. The first thing that they do is fill out an application. This application contains information such as personal data, educational background, past work experience, and references. For some jobs, tests such as intelligence or aptitude may be given to those who are applying.

Completing an application form is one of the first steps in applying for a job.

After the applications are checked and the test scores evaluated, interviews are conducted with those people applying for the job. Much can be learned about a person's appearance, personality, and willingness to work through such interviews.

Much can be learned about an applicant through a personal interview.

Many companies require applicants to take a physical examination. The reason for such an examination is to make certain they are able to do the job and that they do not have any physical defects for which the company could be held liable at a later date.

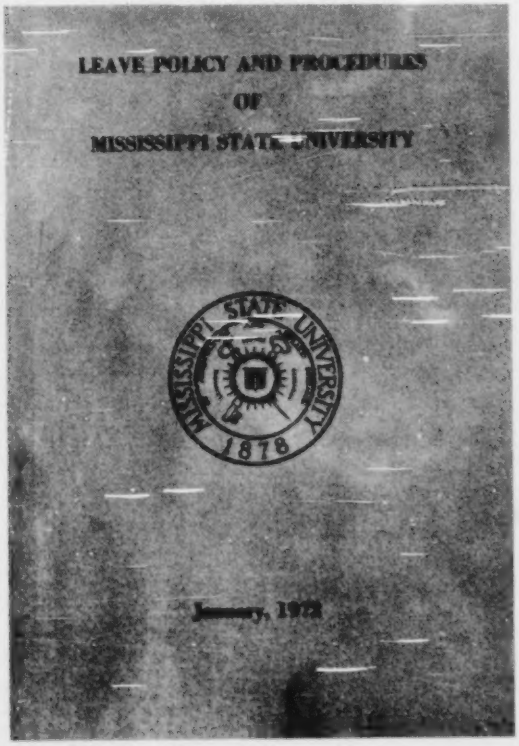
After carefully studying all applications, test scores, interview notes, and reports from the physical examinations, the personnel department is now able to compare the applicants and select the individual best suited for the job.

Inducting

The process of orienting a person to his job is known as inducting. In this induction, the new worker is told something

BEST COPY AVAILABLE

about the history of the company and about the product or products it makes. Rules and regulations of the company are explained to all new workers. Most organizations now have fringe benefits such as group hospitalization insurance, sick leave, and paid vacations. Information about such benefits is given to the new worker. Many companies prepare and give all new employees a "company handbook" which describes these benefits and gives other important information. Some com-



panies take new workers on a tour of the building to point out the location of such things as the time clock, cafeteria, and different departments within the plant. The new employee is then taken to the department to which he has been assigned and is introduced to his immediate supervisor.

The supervisor continues this induction process by introducing the new employee to the people with whom he will be working. He also carefully explains the duties required in the job and other things which will be expected of the new worker. The supervisor tries to answer any questions the new worker has about the company, the department, or his particular job.

Beginning workers must be shown how to "punch in and out" of the plant using the time clock. For most hourly paid workers, these time cards are used to figure the payroll.

All of this induction process is an attempt to get the worker started on the right foot and make him feel at home.

Record Keeping

The personnel department is responsible for keeping records on all employees of the company. Information such as personal data, jobs held, promotions, pay raises, absenteeism, vacation time taken, and turnovers is kept by this department. Because it keeps such records, this department keeps a close look at the company's health personnel-wise. By studying absentee and turnover records, it can make recommendations to management which may improve conditions in certain departments where these things have become a problem.

The department also handles all records for hospitalization and other types of insurance offered to the employees as

BEST COPY AVAILABLE

Keeping records on all company employees is one of the duties of the personnel department.

Many companies today use computers which makes record keeping fast and efficient.

part of the fringe benefits of the company. This not only means record keeping but also involves negotiating contracts with the insurance companies and then explaining the new policies to the employees.

Handling Union Affairs

Where the employees of a company are unionized (belong to a union), someone from the company must represent management in all dealings with the union. In many companies, this responsibility is given to the personnel department. When this is the case, a lot of extra work goes into handling union affairs. This department represents the company in conducting the labor contract negotiations. The people in this department must then interpret the union contract to the supervisors of the company and help them make plans to live up to that contract. They must also handle all grievance work, which involves arranging all grievance meetings and keeping records of the meetings and settlements.

Other Responsibilities

Safety Program

Personnel departments have other responsibilities which include such things as conducting the company's safety program and handling all workmen's compensation claims resulting from work-related accidents. In connection with accidents, all companies make some provisions for providing first aid treatment to injured workers. In very small companies the provisions amount to nothing more than a box of band-aids and a bottle of iodine, but it is not uncommon in large companies to find dispensaries and hospitals on the plant ground staffed with nurses and doctors. These doctors also do the physical examinations on applicants applying for jobs. All of this work is the responsibility of the personnel department.

BEST COPY AVAILABLE

All companies make provisions for providing first aid treatment to injured workers. Large companies usually have a dispensary or hospital on the plant grounds.

Newsletters and Newspapers

The personnel department puts out the company newsletter or newspaper. It collects news items from other departments and writes articles explaining company policies and plans. Sometimes when management has some information or announcements it wants to get to the employees, it may enter this information in the newsletter or newspaper. The actual printing of the newsletter or newspaper may be contracted to a printing firm; but when completed, personnel handles the distribution.

Security and Parking Lots

The security of the plant is generally assigned to the personnel department. This includes the guards to watch the plant and also the supervision of the parking lot.

Supervision of the plant parking lot and security are generally assigned to the personnel department.

This department issues parking decals, assigns parking spaces, supervises the check-in and check-out of employees and visitors, and directs traffic during shift changes.

Athletics and Social Activities

Many companies encourage their workers to take part in company-sponsored sports activities such as bowling, softball, or basketball games. Leagues are organized and competition held between various departments or perhaps with different companies. Personnel arranges the schedules and finds places to hold the games.

Some companies also sponsor such activities as gun clubs, bridge clubs, bicycle riding clubs, and square dance

clubs. When these clubs are available to company employees, the personnel department has the job of informing the employees about them. Many personnel departments have a full-time recreational director on their staff to plan, organize, and manage these activities.

Savings Plans

Many companies operate credit unions for the benefit of their employees. A credit union is like a small bank where company employees can deposit money towards savings or make loans at low interest rates. The credit union is organized and supervised by the personnel department. Through a payroll deduction plan, employees can also purchase United States Savings Bonds as part of a savings plan.

A few companies, as part of their incentive plan, now offer employees the opportunity to purchase stock in the company. Where this is done, employees arrange through the personnel department to have a portion of their pay deducted for the purchase of such stock.

Cafeterias

It is not unusual for companies to operate cafeterias for the benefit of their employees. These are managed by the personnel department and located on the plant grounds. Since they are operated for the convenience of the employees and not to make a profit for the company, prices charged are usually much lower than cafeterias or restaurants in the community. A small cafeteria can serve many people if the lunch schedules are staggered among the various departments.

Company Operated Stores

Companies that require their employees to wear uniforms or certain types of safety equipment often operate a small store where these items can be purchased. The company can, of course, buy at low prices; and this savings can be passed on to the employees. These stores sell such items as safety shoes and boots, uniforms or work clothes, safety glasses, rain gear, work gloves, and hand tools. These stores may also stock and check-out to the workers company furnished items such as hard hats, welding glasses or masks, and other special safety equipment.

Providing Counseling Services

In an attempt to reduce absenteeism and turnover, some companies provide free counseling service to their employees. This includes listening to their problems and suggesting where they should go for help. Other services provide employees with information about managing their money or legal information or advice about loans, contracts, and leases.

Summary

One of the main duties of the personnel department is hiring people for the organization. This involves recruiting, selecting, and inducting all new employees. Other major duties of this department are record keeping and representing the company with all dealings with the unions.

Personnel departments have many other miscellaneous responsibilities. These include conducting the company's safety program, managing the dispensary or hospital, handling the cafeteria, running the company store, providing security and managing the parking lot. This department also puts out the company newsletter or newspaper, organizes and manages the athletic and social activities, encourages employees to save money by providing savings plans, and provides counseling services to those employees who are in need of help.

Words and Phrases You Should Know

Staffing
Recruiting
Selecting
Inducting
Application
Interview
Fringe benefits
Unionized
Incentive plan

Discussion and Research Topics

1. What are the main duties of the personnel department?

2. If you were hiring a person for a job, what would you want to know about the job and the individual applying for the job?

3. Discuss the steps involved in staffing an organization.

4. Record keeping is an important part of the work of the personnel department. Why is record keeping important?

5. What occupations would be found in a personnel department?

BEST COPY AVAILABLE

PURCHASING DEPARTMENT

What the Department Does

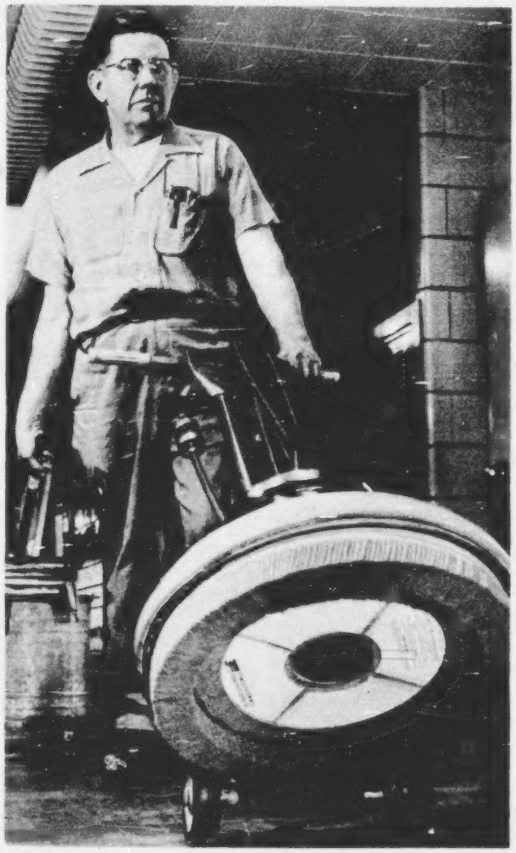
In most corporations you find a department charged with the responsibility of purchasing everything which is needed to run the company. In a very small concern this responsibility is placed on one person, and he has other duties to perform as well. In a large corporation, a hundred or perhaps a thousand or more people are needed to perform this work. As you can guess from the work they do, this department is called the purchasing department. In the military and in some other organizations, this department is called the procurement department.

What Must Be Purchased

Just what has to be bought in order to keep the company running? Very quickly you think of the raw materials which are going to be manufactured into finished products, but there is a lot more. Perhaps this is a good place to pause a moment and consider some of the things that it takes to keep the company running, because these same things all have to be bought by our purchasing department.

The raw materials needed for production have already been mentioned, so let us start there. These raw materials are used by men and women working on machines and using hand tools. These machines and hand tools are bought, and sooner or later as they break down, parts have to be ordered to repair them. After the product is completed, it is prepared for shipping to the seller. Boxes and crates are needed, if a product is to be boxed. If not, only a shipping label is required. Somebody still has to buy the shipping label.

Everybody knows that it is important to keep the work area clean. You have to buy some brooms and mops for the janitorial workers, not to mention buckets,



All material and supplies must be obtained by the purchasing department.

dustpans, soap, wax, paper towels, and rags.

Have you ever had to replace a fuse, light bulb, or air-conditioner filter in your home? Industry has this same problem, and somebody must buy these items. Many more things could be mentioned, but by now you should have the idea. It takes a lot of things to keep production running, and all these things have to be purchased.

Cost of Materials

Most companies which manufacture a product spend more than half of the money received from sales on materials. A company doing a 10 million dollar business probably is spending over 5 million dollars a year on materials alone. Some of the larger manufacturers in the United States spend millions of dollars each day on materials. All of these purchases have to be handled by the purchasing department.

Purchasing Equipment and Supplies

It has been mentioned before that corporations are in business to make money. This is accomplished by hiring men and women to manufacture goods or to provide services. It is absolutely necessary, therefore, to make sure that these people have the equipment and supplies necessary to perform their work. If it ever becomes necessary to have a work stoppage due to a lack of supplies with which to work, the organization loses money in two ways. First, the company loses because nothing is being produced, and secondly, to make matters worse, the company must continue paying people who should be working but are not because of a lack of supplies.

In some types of work where only one or two people are involved, the workers do their own purchasing of the supplies needed to carry on their work. The housewife, for example, goes to the supermarket to buy the groceries she needs to cook the family supper. The auto mechanic, who is in business for himself, stops working on a car to phone or go to the parts house to buy a carburetor needed to repair the car. In large organizations, however, this method of purchasing just will not work. The housewife that purchased the makings for the family supper may have stopped to have her hair done at the beauty shop before returning home to begin cooking. There is no harm done there, but how would you like to be paying the wages of a worker that left work to go buy some supplies needed to do his work and decided to stop and get his hair cut? If the auto mechanic does not pay his bill at the parts house by the end of the month, the owner could refuse him any additional credit. How would you like to be refused credit because of some outstanding bills that your workers have not paid which you did not even know about? What is needed is a method of purchasing which insures that all equipment and supplies are bought at the right time, at the best price, and after they are received, the bills are paid. This system must also allow a method of keeping an accurate account of all money spent for equipment and supplies.

Specifications

Specifications are written descriptions of materials to be purchased and are usually prepared by the purchasing department. For some materials the specifications are simple and may include nothing more than the name and catalogue or part number. But for some orders, the specifications become very involved. At times, words alone cannot fully describe an object, and drawings must be included in the specifications. Some specifications require technical information about the material such as tensile strength, surface hardness, voltage output, chemical content or heat resistance.

You probably do most of your buying in a store and can see and handle the

BEST COPY AVAILABLE

This purchasing agent is checking specification on a bid sheet to see that all needed technical information has been included.

product as well as ask questions of the salesman. In a purchasing department, however, just about everything ordered is done so through the mail. It is very important, therefore, that the specifications contain all of the information needed to fully describe the materials to be purchased.

Getting Bids

Have you ever bought something and later found out that the same item was cheaper at another store? There is a solution for this. It is called "shopping around." With the hundreds of items the purchasing department has to buy, it is impossible for its personnel to go from store to store to compare prices. But in a way they do just that. The system is called getting bids. How does this system work?

As the requisitions (orders) are received from the different departments,

Requisitions are compiled and typed on bid sheets.

they are compiled into a list according to the nature of the supplies . These compiled lists are needed, since the companies selling materials usually specialize. For example, you do not buy tools from the same people that sell office supplies. Janitorial supplies are bought from still another company. After the lists are completed (called bid sheets), they are sent to three or more companies requesting prices. When the purchasing department receives these returned bid sheets, its employees carefully examine them to determine where the company can get the materials at the best price. Orders are then placed with the companies which have quoted the cheapest prices. So you see that this system is very much the same as your "shopping around" for lowest prices before you buy.

All government agencies and most large corporations require this system of purchasing. As citizens, we should be glad to know that when the government spends our money, it gets the best price for what is bought.

BEST COPY AVAILABLE

Modern computers are often used to keep track of materials and supplies ordered.

Receiving Materials and Supplies

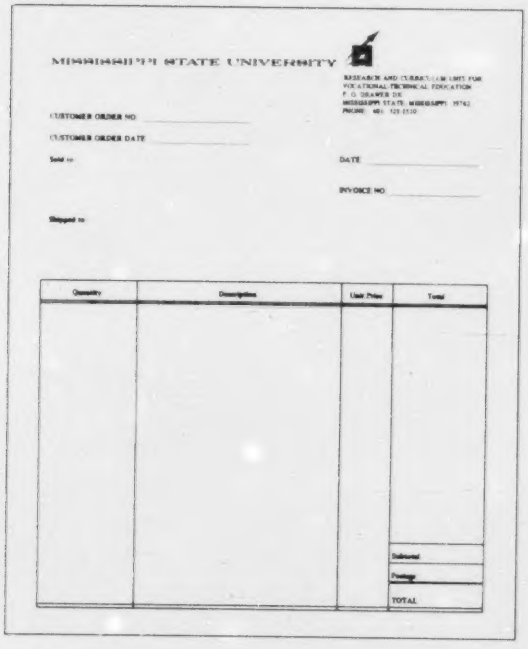
The work of the purchasing department is not complete until all materials and supplies which have been ordered are received. In most organizations, everything which has been ordered is delivered to the receiving department where it is checked and inspected for damages. The receiving department then sends a "receiving report" to purchasing. Purchasing can then tell the accounting department that the materials have been received and that the bill should be paid.

If, however, the materials or supplies are received in a damaged condition, or if some of the items are missing, the purchasing department must handle all dealings with the supplying company.

Invoices and Sales Slips

An invoice is an itemized list of goods shipped or sold to a customer. It lists the number of items (quantity), the name of the items (description), the unit price (the cost of one item of that type), and the total price (the unit price times the quantity ordered). Other information includes the date, an invoice number, the name and address of the place to which the order is to

All materials received must be checked to make sure the order is correct and has not been damaged in shipment.



be shipped, and the total price of the bill. Usually two or more copies of an invoice are made, depending on the system of record keeping used by the organization. One copy, however, always goes to the customer. This is the bill.

You may have bought something at a store for which you were given an invoice that was not completely filled out. This is a common practice particularly when you pay cash and take the merchandise with you. The seller may have written the words "cash sale" in the place for the customer's name, or he may have left it blank. Usually the quantity, description, and total price is completed. It is also a common practice to write the word "paid" at the bottom of the invoice when it is a cash sale. Have you ever wondered why the salesman went to the trouble of filling out the invoice? Well, it is done because it is an important part of the bookkeeping system. Later the organization uses the invoice to account for the stock which is missing from the store.

Some stores do not use invoices because of the volume of business done and the speed at which it is handled. Examples of these are supermarkets and discount stores. Just think of standing in line at the check-out counter of a supermarket while the checker itemizes each thing the person in front of you has put in the cart.

Using this method, all of the items are rung up on the cash register, taxes added, and then the bill is totaled. The customer is given the tape which is the sales slip. You may not know it, but cash registers have two tapes on which the sales are recorded. One is torn off bit by bit and given to the customers; the other tape stays in the machine. It is used at the end of the day to account for sales.

Summary

The purchasing department is responsible for ordering all materials and supplies needed by the organization. Requests for materials and supplies are sent from the various departments within the organization to purchasing where these are combined. Bid sheets requesting price quotations are prepared and sent to three or more businesses which sell those items listed. After the bid sheets are returned, they are carefully studied to see who has quoted the lowest prices. Orders for the materials and supplies are then sent to the various businesses.

Words and Phrases You Should Know

Procurement department
Getting bids
Requisition
Specifications
Bid sheet
Invoice

Discussion and Research Topics

1. What procedure takes place between the time when a decision is made to purchase an item and the time that the item is delivered for use?

2. Select two items in your classroom or laboratory and prepare specifications for these items.

3. Why does the process of "getting bids" result in obtaining the best price for an item?

4. Compile a list of the items in your classroom which were purchased after the school was constructed.

5. What occupations would be found in a purchasing department?

PUBLIC RELATIONS

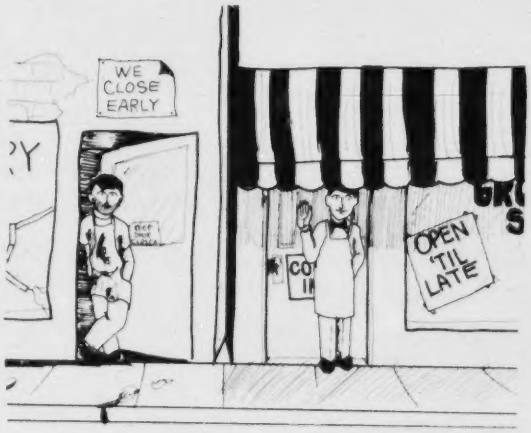
BEST COPY AVAILABLE

What Public Relations Is

Public relations is the art or science of developing reciprocal understanding and goodwill between a person, firm, or institution and the public.

With this definition in mind, one might wonder why a business should be concerned with developing understanding and goodwill with the public. It can be reasoned that all a business has to do is produce a good product and the public will buy it, goodwill or not. Well this just is not the case. There is not much that any business makes today in the line of products which is not made by other companies. The automobile industry is a good example of this. If you are in the market for a mini car, you will find that American Motors, Chrysler, Ford, and General Motors all manufacture this type of automobile. And the cars are all priced about the same. This is also true for midsize cars, family cars, and luxury automobiles. Competition is tough in industry; and in many cases, it is not the car as much as the public relations which the particular company has that helps determine sales.

A simple example may be helpful in understanding the value of public relations. Picture in your mind two grocery stores. Each carries the same line of food products, prices are the same, and they are both the same distance from your home. At store A, the manager, checkers, and bag boys are friendly, helpful, and polite. The personnel at store B, however, appear just the opposite and give the impression that they do not care if you do business in their store or not. Now where would you prefer to do your grocery shopping?



How the public reacts to a business is very important.

Public relations is very important. It has become a multimillion dollar business in the United States. Most large companies have public relations departments, and smaller companies usually contract this work to firms specializing in this area of business.

Developing understanding and goodwill depends upon keeping the public informed, and public relations often becomes concerned with methods of informing the public. This is important in all organizations, but particularly with nonprofit organizations which depend on government or public support in order to raise needed funds. What type of response

BEST COPY AVAILABLE

to a fund-raising drive would an organization such as the Red Cross receive if it did not keep the public informed of its work in helping people during times of disasters? It is questionable whether the NASA space program, depending on funds appropriated each year by Congress, would have achieved such success had it not been for the public relations work done in keeping all informed concerning its plans, efforts, and accomplishments.

Many Different Publics

When you hear someone say public relations, it is natural to think of the word "public" as being all of the people. This is not necessarily so because in public relations work the public means different things at different times. At times the public is one group of people, and at other times it involves a completely different group of people. The public relations department of a large manufacturing firm does work aimed at gaining the support and goodwill of several different publics. The first public, or group, involves the employees of the firm. Much work is done in this area attempting to secure worker cooperation, pride in the company, interest, and goodwill. A second public, or group, is the community in which the firm is located. Community understanding and support are desired and sought by all businesses. The third public, or group, includes the people in a region or perhaps the whole nation who may be the buyers of the company's products.

Methods Used in Public Relations

In public relations work, all of the various devices and media of communication are employed to inform the public about a person, firm, or institution. They include news stories on radio, television, newspapers, and magazines. The mail service is used for sending letters, brochures, pamphlets, and booklets. Many firms are finding the open house and plant tour to be successful. Letting the public see what is happening on the inside seems to be of great value in public relations work. Personal visits by representatives of the company are also helpful. The list of

Media of all types are used in public relation work.

ways and means used in public relations work is endless, but all are concerned with gaining the understanding, goodwill, and support of the public.

Public Relations — Everybody's Job

One of the problems faced by those charged with the responsibility for doing public relations work is gaining the cooperation of all people involved, either directly or indirectly, with the organization. This is no easy job considering the large number of people involved in some organizations. In the automobile industry, for example, millions of dollars may be spent each year attempting to gain the goodwill of the public. That money and ef-

fort can often be offset years later by a grouchy mechanic complaining about how the company just slapped the car together and did not seem to care whether it held up or not. The car owner may have had faith in the company and his car, but now he has doubts. At times, the work of public relations is to undo the bad public relations of others. Although the main efforts in public relations may be assigned to a few, public relations truly becomes the work of everybody in the company all up and down the line.

Summary

Public relations is concerned with developing goodwill and understanding between the organization and the public. It has become a multimillion dollar business in the United States. The main duty of those involved in public relations work is that of keeping the public informed about the organization and attempting to gain their cooperation and support. Although this work is assigned to only a few people in the organization, public relations is the concern of all those employed in the organization.

Words and Phrases You Should Know

Public relations
Media of communication
Multimillion dollar business
Goodwill

Discussion and Research Topics

1. Discuss the reasons why good public relations is important to a business.

2. Select a business in your community and discuss ways in which it could improve its public relations.

3. Discuss the reasons why your school system should be interested in public relations.

4. Make a list of the media used in public relations work.

5. What type of occupations would be found in a public relations department?

BEST COPY AVAILABLE

PLANNING FOR PRODUCTION

In retracing the chain of events which resulted with the riding lawn mower being in the department store, we have so far seen why the decision to produce the mower was made and how the mower was designed. At this stage it is known how the mower will look and how it will operate. Can production begin? No, because much planning and work is necessary in order to get everything ready to begin production. What is involved in this planning?

The Decision to Make or Buy

Early in the planning stages of production, decisions are reached as to what parts will be made and what parts will be bought. It may seem a little funny that a business which manufactures products buys some of the parts, but they do just that. There are dozens of companies manufacturing lawn mowers, but most use Briggs & Stratton or Clinton engines on them. Engines are not the only items that are bought. Sometimes the company does not have the machinery required to make certain parts. You may ask then why they do not purchase those machines? Sometimes they do and at other times they do not. It depends on the number of parts needed; it is sometimes cheaper to buy the parts than to buy the machines needed to make the parts. Any company which makes a lawn mower should be able to make something as simple as a cotter pin. But at less than $1.00 per gross (144), why go to the trouble?

All parts of the mower, such as wheels, pulleys, belts, gears, blades, steering wheel, and even bolts and nuts are studied. Then, considering the company can make them, the decision is made as to whether the least expensive method is to make or to buy. It should be obvious why these decisions are made early in the planning stage. Parts which are to be bought must be ordered and received before production can begin. Likewise, for parts which are to be made, plans are started for their production.

Analysis of Operations

All of the parts which are to be made must be carefully studied to determine what processes are required to produce them. These processes are called operations. Usually the making of parts requires machine operations (work per-

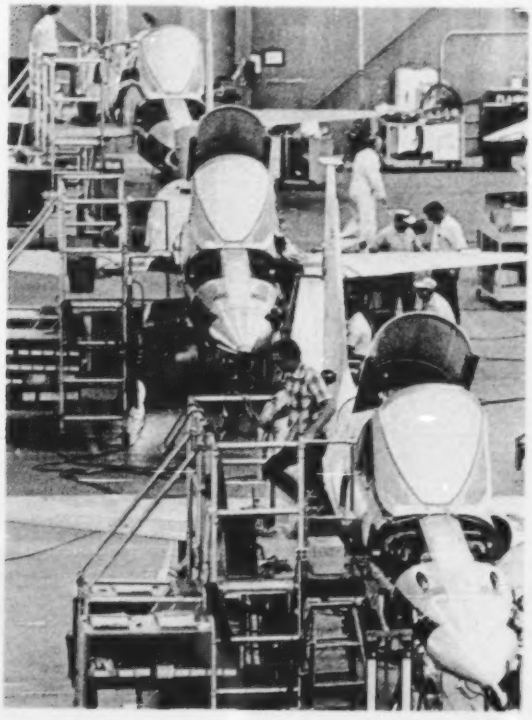
These engineers begin to make an analysis of operations by carefully examining the prototype of this new hay baler.

BEST COPY AVAILABLE

formed on machines), whereas the assembling of parts usually requires hand operations (work performed by people, perhaps using hand tools).

Each part is studied to determine the machine operations required.

Why must the parts be analyzed to determine the operations involved? The operations determine what machines must be used to make the finished parts. Some parts are started and completed on one machine. Another part may require operations done on two or three different types of machines before it is completed.



Work conditions must also be studied when making an operation analysis. Platforms or scaffolds may be needed to enable workers to perform their jobs efficiently.

Some operations can be performed in more than one way. A round hole in a part for a bolt to pass through can be drilled, punched, or stamped. Which is the best method? The answer depends on many things, but always the most economical method is selected. If the part must go to the stamping machine for other work, why not stamp the hole while the part is there? This eliminates the need to move that part to another machine for drilling or punching. Information such as this can only be learned by analysis of operations.

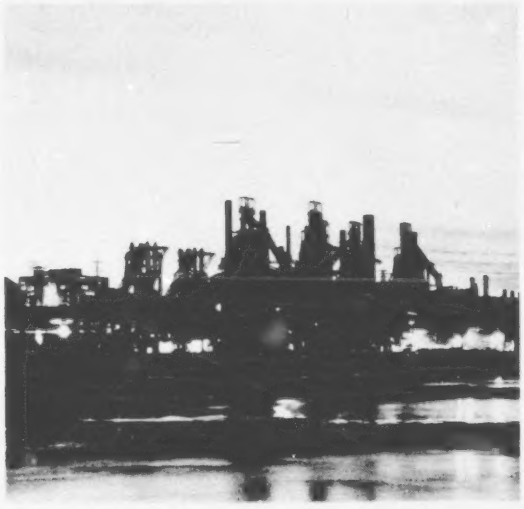
The Decision to Expand or Add Another Shift

Any decision to introduce a new product creates the need for other decisions to be made by top management. In the case of the lawn mower company, just who is going to make the new riding mowers? Will it be the same employees who presently work for the company manufacturing the push-type and self-propelled mowers? If so, then production on these has to stop because these employees cannot be making both at the same time. If sales, however, indicate production on the old type mowers should continue, it will be necessary to employ a new crew of workers to manufacture the riding type mower. If additional employees are hired, just where are they supposed to work? Is there room in the plant to install additional machines and set up a new assembly line, or will it be necessary to increase the floor space of the plant to take care of these workers and their machines? How much will this expansion cost?

One method of avoiding the high cost of expansion is to work a second shift. After all, there is a tremendous amount of capital invested in the plant and equip-

BEST COPY AVAILABLE

ment; but it is in use only 8 hours a day, sitting idle the remaining 16 hours. Working a second shift makes better use of the facilities.



Steelmaking operations continue round-the-clock at this Bethelem steel plant.

Let us assume that the lawn mower company decides on the second shift rather than expansion. Does this mean the second shift makes the riding mowers? It might be more efficient for both shifts to work on the push-type and self-propelled mowers and get the orders filled in half the time. Both shifts can then begin manufacturing the riding mowers.

Hiring workers for this second shift becomes the concern of the personnel department. But no one wants all new workers on a shift. Some old employees of the company, particularly a few line foremen must be "talked" into changing to the second shift.

The original decision to produce the riding mower came about because of the need to keep up with the competition. This decision brought about the need for other decisions which must be made before production can begin.

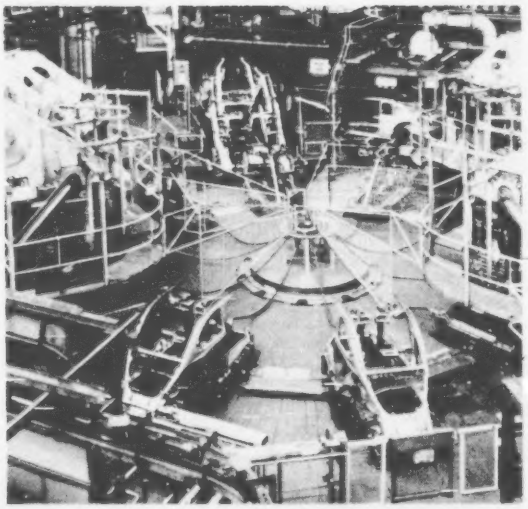
Routing of Work

After the analysis of operations is completed and it is decided what operations must be performed and on what machines, plans are made to route the work through the plant. Production is really materials in motion. This means that as the material moves through the plant, it is worked on and finally becomes a completed product. This movement of material through the plant is routed in the most efficient manner. In an ideal situation, raw materials enter at one end of the plant, are processed as they move through the plant, and exit at the other end of the plant as a finished product.

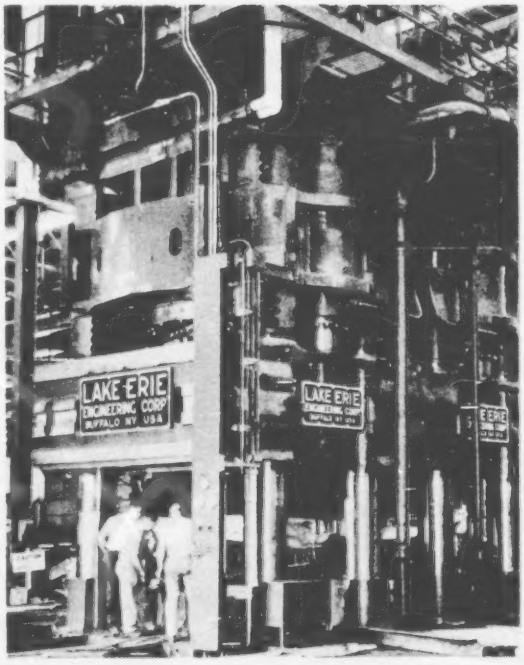
In attempting to reach this ideal situation, men and machines are positioned within the plant in accordance with the sequence of operations to be performed on the material. For example, for whatever must be done first on the raw materials, men and machines are positioned so they can perform that operation just as the material is brought into the plant. There is no sense in moving the material through the entire plant before the first operation is performed. For all other operations, men and machines are positioned in just the correct sequence.

Sequence of operations is not the only factor to be considered in routing the work through the plant. Rate (how fast) at which operations are performed is also taken into account. Suppose the men and machines performing the first operation work at a rate of 100 units per hour. The men and machines performing the second operation on the same part, however, work at the rate of 300 units per hour. Unless the plan calls for the crew of the first operation to begin several days before the other crew and stockpile parts, there is a problem. The solution may be three machines performing the first operation. Regardless of the solution selected, the problem should be

BEST COPY AVAILABLE



This ten-station "merry-go-round produces Volkswagen rear sections at a rate of 240 an hour.



Many machines are too large to move. This 10,000 ton press at the McDonnell plant is an example. Materials to be worked must be routed to this press.

solved during this planning stage before production begins. In a similar manner, the rate for each operation involved in manufacturing the product is considered to avoid bottlenecks.

Flow Charts

When planning the routing of work through the plant, engineers do much of their planning by making flow charts. A flow chart is a drawing of the floor plan of the plant showing where the machines and work areas are located with lines indicating how material moves or flows through the plant during production. The machines are represented by little cardboard cutouts which are to scale. Some people, however, prefer to use three-dimensional models of the machines rather than the cardboard cutouts.

Since the layout of a plant to insure proper positioning of machines and work areas for proper routing of work is somewhat of a trial and error method, the cutouts or models are moved on the floor plan until the best solution is found. It is much cheaper to move cutouts or models on paper than it is to move the actual machines in trying to work out the solution. Only after the flow chart is completed and approved will the machines be moved. When moving time does come, the flow chart is used as a plan showing exactly where each machine is to be set up.

Production work, of course, must stop during this setting up period. In the case of the lawn mower company, work would stop on the manufacturing of the push-type and self-propelled models while the plant is being set up to manufacture the riding mowers. With proper planning and by following the flow chart, the change could perhaps be done overnight. If this is possible, the result would be no interruption in production.

Materials Handling

All materials, whether they be raw materials, parts, materials in process, sub-

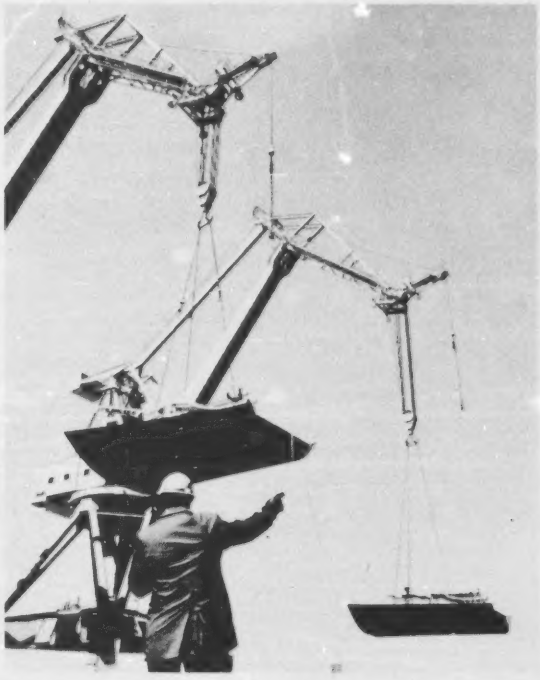
BEST COPY AVAILABLE

Notice the means of materials handling used at this Volkswagen plant in Wolfsburg, Germany.

assemblies, finished products, or scraps which are produced in industry must be handled. During the planning stage for production, methods are selected to move all of this material.

Some of the more common methods used in industry to move materials include tote boxes, conveyors, chutes, overhead cranes, and forklift trucks. The method selected in each case depends on the nature of the material, its size and shape, and the distance it has to be moved.

How will the raw materials be moved to the machine performing the first operation? How does the part produced on the first machine move to the second machine for completion? How will all parts be moved to the line for assembly? Questions such as these must be asked and methods determined. Methods for handling materials are decided upon while the routing of work and the positioning of machines and work areas are being planned. One example should show the need for this.



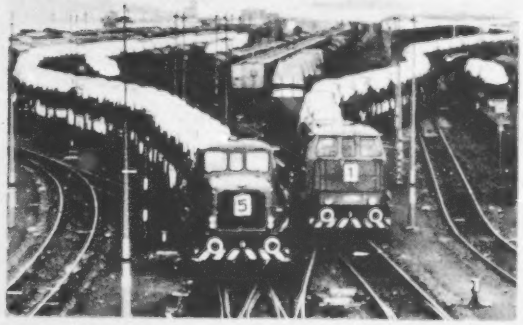
In shipbuilding all materials must be moved to the place where it is being constructed.

How will the part produced on the first machine be moved to the second machine for completion? One solution is for the operator of the first machine to put the part in a tote box after he has completed his work on that part. When the tote box is full, it is carried to the operator at the second machine. That is one solution, but it may not be the best. Would it be possible to position the first machine and the second machine side by side? If this can be done, the operator of the first machine can place the part in the tote box with his right hand and the operator of the second machine can pick up the part with his left hand. The need to carry the tote box from one machine to the other is now eliminated. Systems such as this must be planned before the machines are moved. Plans for

BEST COPY AVAILABLE

Talk about moving materials in a hurry, this unloader picks up 20-tons of ore in a single bite.

the movement of all materials must be studied to make sure that the best method, and that quite often is the simplest, is found.



Materials handling does not stop just because the product has been assembled. These completed Volkswagens are moved by means of double-decker railway trains to the dealers.

Safety

Working safely, free of accidents, is not something that just happens. The safety of the workers is something which must be planned before production begins. Practically all industrial accidents

Where plans are not made for the safety of workers, accidents usually happen.

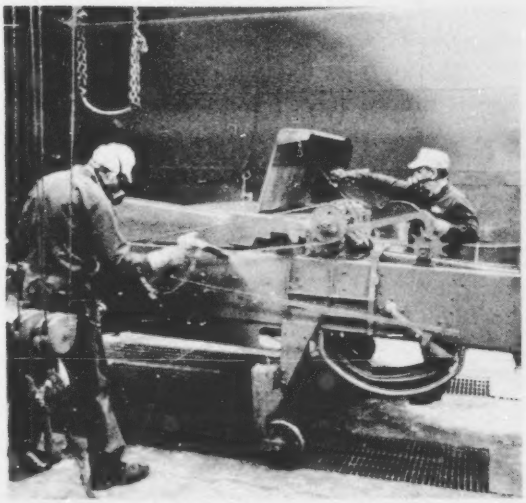
and the injuries they produce are the result of a combination of two factors. These factors are:

1. Unsafe acts on the part of the worker
2. Unsafe mechanical or physical conditions in the plant

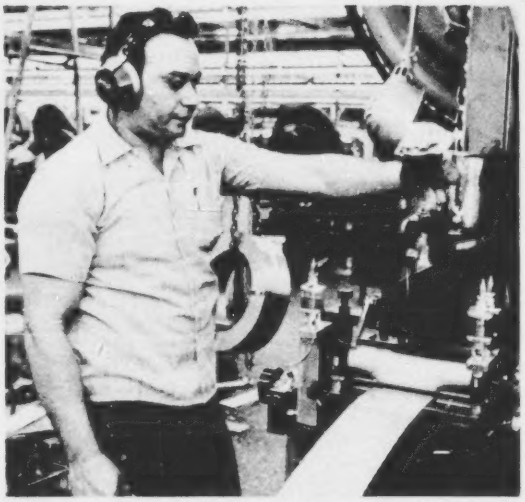
If work is to be made safe, steps must be taken to see that the workers do not commit any unsafe acts and that all unsafe conditions within the plant are corrected. Most large companies have safety directors charged with the responsibility of safety within the plant.

Why should industry be so concerned about the safety of their workers? They cannot afford not to be concerned. Most industrial workers today come under state unemployment compensation laws. Briefly stated, such laws require the industry to pay all medical expenses of an injured employee and also a certain portion of his wages while he is recovering from that injury. In the case of a serious injury, this can become very expensive. It is less

BEST COPY AVAILABLE



These painters are wearing respirators for protection against inhaling paint and fumes.



Hearing protectors are a safety device worn by workers in plants where noise is a problem.

This foundry worker wears special safety clothing and goggles for protection against burns. Notice also the dirt floor which is a requirement when pouring hot metals.

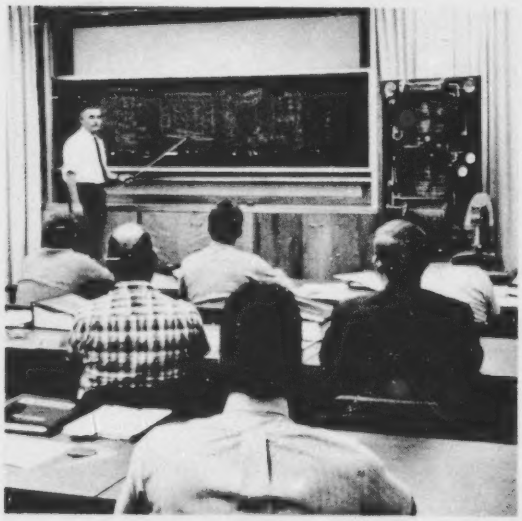
expensive to hire safety personnel and to do everything possible to make the plant safe.

The elimination of unsafe acts on the part of the workers is the goal of safety training. Proper methods of using the machines, need for following safety rules, and the importance of using and wearing safety devices and clothing are stressed during this training. Hopefully, with this training and good supervision, unsafe acts of the workers can be controlled.

In the elimination of unsafe mechanical or physical conditions in the plant, plans must start early to make the plant safe. During the routing of work and the location of machines, the safety of the workers must always be considered. Is there enough space for the operator to work at the machine? Are aisles wide enough for workers to pass without being too close to dangerous machines? Is there safe access to every place the workers must go? Is there adequate light for the operators? If mechanical means of materials handling are used, are the

BEST COPY AVAILABLE

workers protected from being caught in or struck by them? Questions such as these must be asked and solutions found before machines are moved prior to production. Machines must be inspected to see that they are in good operating condition. Proper guards should be installed on all machines.



Many companies conduct classes in safety for their employees during the normal working day.

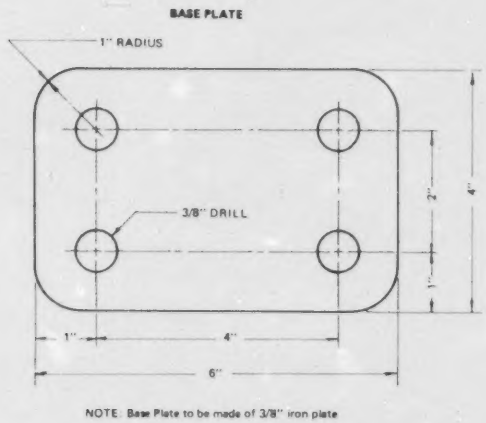
The safety of the workers is very important. No-accident work records can only be had with proper planning. After an accident happens and workers are injured, it is too late.

Jigs and Fixtures

Tooling-up for production involves moving machines, work tables, and work areas into location to allow for the correct routing of work. It also includes designing and making jigs and fixtures which are needed during production. Jigs and fixtures are devices used to correctly position or hold a piece of work with the tool performing the operation. The advantages include:

1. Helps reduce manufacturing cost
2. Helps assure accuracy
3. Reduces the skill required to perform operations
4. Enables machines to perform additional operations

Let us examine closely a job that an operator of a drill press performs. He drills four holes in the base plate as shown on the drawing below.

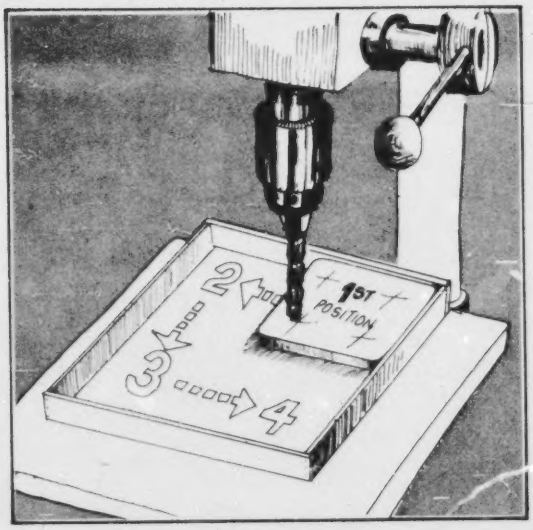


NOTE. Base Plate to be made of 3/8" iron plate

In performing this job, he first lays out the work. This requires making four measurements and drawing four lines to locate centers before he drills the holes. This method is fine if he only has one or two base plates to drill, but suppose he has several thousand to do. A faster and more accurate method is to design and construct a jig which fastens to the table of the drill press. This jig will correctly position the work for the operator.

With the aid of the jig, the operator has only to place the base plate in the first position and drill the hole. He then slides it to the second position and drills the second hole, and so on. By using this jig,

BEST COPY AVAILABLE



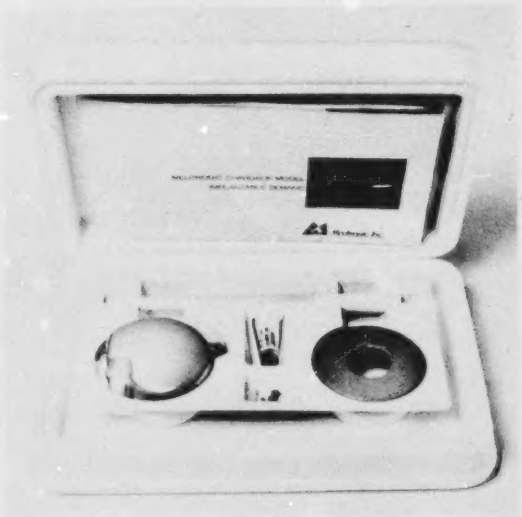
there is no need to lay out each piece. This process saves a great deal of time. If the operator does not waste time positioning the base plate before drilling, more time is saved. When time is saved, money is saved because the operator is probably being paid by the hour.

This is not the only advantage of using the jig. Two other factors are equally important. First, all of the base plates drilled in this jig are the same, which is very important in this day of interchangeable parts. And second, the operator does not have to be as skillful; he does not even have to know how to measure with a rule, so he does not have to be paid as much as a skilled worker.

Jigs and fixtures should be designed and constructed for all operations where they will be helpful. Although in a few cases they are expensive, in most cases they can be built from scrap material. Jigs and fixtures can be constructed to assist workers doing assembling operations. Devices for holding materials while they are being glued or fastened prove to be very time saving.

Packaging the Product

Plans must be made for the packaging of the product prior to beginning production. Packaging is done for several reasons. Sometimes it is to hold the product as would be the case with cement, paint, powder, poultry feeds, toothpaste, or any type of liquid product. With other products, packaging is done to protect the product from damage during shipping.



This pacemaker can mean the difference between life and death to someone with a heart block. The package is made of styrofoam to protect the pacemaker during shipment to a hospital.

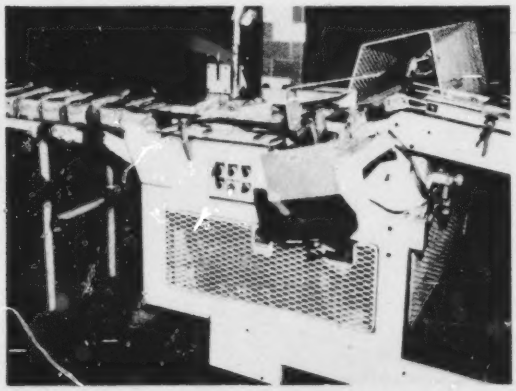
Radios, clocks, refrigerators, hair dryers, and sewing machines are examples of products which are packaged to protect them during shipping. Packaging is also done to make products easy to handle. Products put into square or rectangular shaped boxes are easy to stack and take less room.

Many types of materials are used today to package products. There are bottles, jars, cans, drums, boxes, crates, bags, and sacks. They can be made from metal,

BEST COPY AVAILABLE

wood, paper, cardboard, cloth, or plastic.

In planning for packaging, the rate at which it is done is carefully studied to insure that bottlenecks do not occur to slow up production. The most suitable way to

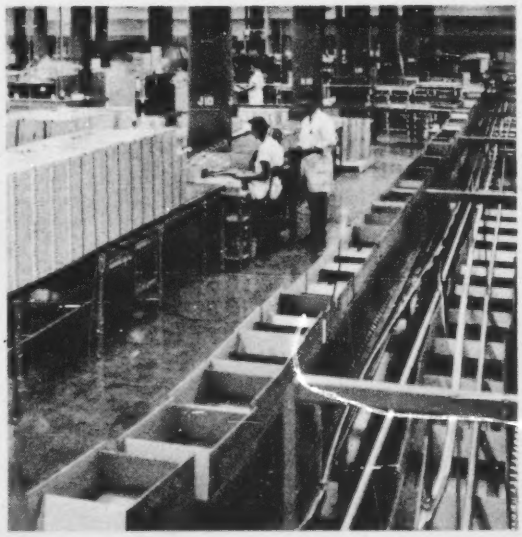


After these loaves of bread have been sliced, they move by conveyor to this machine where they are packaged into wrappers.

package is also sought. At times, the size of the package is greatly reduced by not completely assembling the product. A push-type lawn mower, for example, requires a very large box if completely assembled. If the handle is not bolted to the base, however, the package is much smaller.

Many products are often packaged twice to make them easy to handle. Soap, toothpaste, shampoo, canned food goods, and many other small items are usually packaged in boxes containing several dozen, making them much easier to ship to the wholesaler and retailer. In packaging, everything must be labeled to identify what the package contains. Other special instructions such as "This Side Up," "Do Not Use Hooks," and "Do Not Stack," must be labeled where they apply.

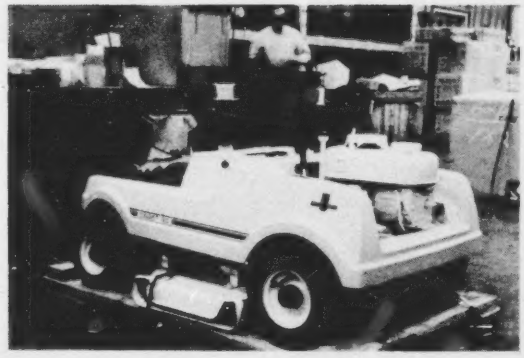
The reason for packaging, the method of packaging, the type of packaging, and the rate at which products are packaged



Film at this Kodak plant is first packaged in single units and then repackaged into boxes for ease of handling and shipping.

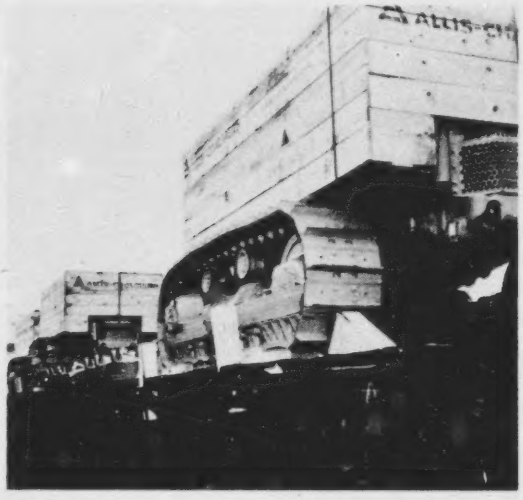
This worker is packaging V-Belts. This simple type of retainer will make it easy to identify the belt as to size and type.

BEST COPY AVAILABLE



This riding mower is first fastened onto a pallet which will allow it to be easily moved by fork-lift.

are carefully studied. Based on this study, plans are made to insure that nothing is overlooked before production begins.



These 13-ton crawler tractors are being sent half around the world to Burma. Special crating is required for protection during the journey.

Inspection

Why inspect? — It is commonly believed that inspection involves examining a finished product to determine if it has been made correctly. Although some inspection is done for this purpose, this is not the main reason for inspection. The main reason is to eliminate the waste of working on defective materials and producing faulty products. Every time a defective product is manufactured the company loses not only the materials involved, but also the wages paid the workers to produce the defective product, as well as the loss of an acceptable product which could have been manufactured in the same amount of time. Most of the inspection done in manufacturing plants, therefore, takes place before the product has been completed.

Another good reason for inspecting while the product is being built is to learn just what is being done wrong when something is found defective so it can be corrected. Most work done on machines will be correct, provided the machine is properly adjusted and set up correctly. If the machine starts to turn out faulty work it

A visual inspection of these circular saw housings is made as they are removed from the painting racks and placed on the conveyor belt.

is probably out of adjustment or set up wrong. If caught in time, it can be corrected before too many faulty parts are made. This would not be possible, however, if products were only inspected after they were completed.

When to inspect? — All work in a plant employing thousands of workers cannot

BEST COPY AVAILABLE

be inspected. This would require too much time and would be very costly. It is important, therefore, to know when to inspect. There are some general rules about when to inspect. These are:

1. Inspect all materials purchased — be sure you receive what has been ordered and that it is not damaged.

2. Inspect before starting time-consuming or costly operations. Do not waste time or money performing work on defective materials.

3. Inspect before starting operations which could damage or jam machines. Example — Do not ruin planer knives by running boards with nails through planer.

4. Inspect before starting assembly operations which are difficult to take apart.

5. Inspect finished products before they leave the plant.

These electrical components are carefully checked before being assembled into the product.

Who will inspect? — Much of the inspection mentioned in the rules above can be done by the production workers if they are instructed properly. In most cases, the workers must pick up the material to position it on the machine or install it on the product. While doing this, a quick visual inspection of the material can be made. In most cases, this is all that is necessary to determine if material is acceptable or faulty. Having the production workers do this inspection while they are performing their work greatly reduces the number of personnel required to do only inspection.

There are times when materials require more than a visual inspection to determine their condition. Special testing equipment, requiring a great deal of train-

More than 8,000 inspectors maintain a constant watch to insure quality at Volkswagen plants in Germany. This inspector checks a magnesium crankcase half after machining.

BEST COPY AVAILABLE

ing for operation, must sometimes be used. Mechanical products, such as engines, must be run to detemine their performance. In these cases, specially trained inspection personnel must do the inspecting.

These engineering and production technicians run a set of programs to make sure these computers are operating correctly.

This employee checks auto equipment papers at the Ford Wayne, Michigan, assembly plant.

During the planning stage of production, careful consideration must be given to inspection. Who will inspect and when inspection will be done must be decided. Special instruction may have to be given to production workers concerning inspection.

Careful attention during the trial run should be devoted to inspection, making sure that all personnel are carrying out inspection procedures correctly.

Electric motor fields for Black & Decker power tools are inspected at the end of the subassembly automatic winding line.

Trial Run

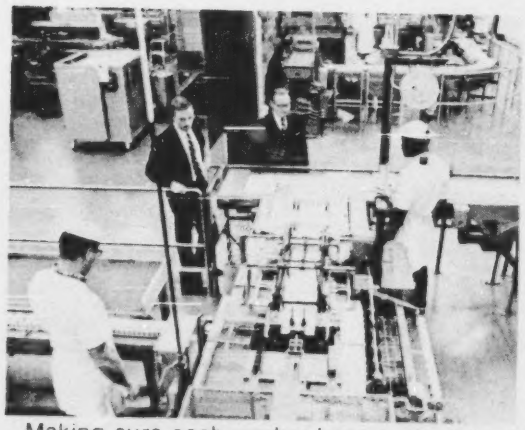
Regardless of the amount of planning, it is always a good idea to conduct a trial run before beginning production. This trial run is similar to a dress rehearsal. It is the last chance to get all of the "bugs" out before the big show starts. During the trial run, production is actually performed. As work is completed on each machine, each piece is carefully checked to see that it is being made correctly. If not, adjustments are made. The routing of work is watched closely, and if bottlenecks occur, they are

65

BEST COPY AVAILABLE

corrected. Systems worked out in advance for materials handling are tested to see if they are moving materials as intended.

This trial run provides an opportunity to make sure that all workers understand exactly what they are supposed to do. If



Making sure each worker knows exactly what he is to do is one of the reasons for a trial run.

problems arise, the foremen show the workers what they are doing wrong and what must be done in order to do the job right. As workers are not rushed during this run, they have the time to straighten out mistakes.

One last advantage of the trial run is that it offers the opportunity to make sure that all necessary planning has been done. If something has been overlooked, it should show up; and it can be corrected.

Summary

After it is known exactly what the product is, how it looks, and how it operates, much planning and work is done before production can begin. Decisions are reached concerning who will make the product and where it will be made. Such decisions may require expansion of the plant, possibly working another shift and the hiring of additional workers. It is also decided what parts will be made in the plant and what parts will be bought.

Work is performed to analyze each part of the product to determine the operations required in its production. Plans for the routing of work during production are made. Such plans take into consideration the positioning of machines, methods of materials handling, and the safety of the workers. Jigs and fixtures are designed and constructed to help speed up the work and, therefore, reduce the cost of production.

The last step in planning for production consists of a trial run. This is the final check to make sure that nothing has been overlooked before actual production begins.

Words and Phrases You Should Know

Analysis of operations
Second shift
Routing of work
Sequence of operations
Rate of operation
Flow chart
Materials handling
Unsafe act
Unsafe mechanical or physical condition
Tooling-up
Jigs and fixtures
Packaging
Trial run

Discussion and Research Topics

1. Make a list of things which must be done before production of a product can begin.

2. Assume that the enrollment in your school will double next year. Discuss some ways which the over-crowded conditions could be solved.

3. Select a piece of furniture in your classroom and make an analysis of operation for that item.

4. Sketch a floor plan of your school cafeteria. Now make a flow chart on this plan showing how students move through the cafeteria from the time they enter until the time that they leave. Are there any bottlenecks? If so, how could they be eliminated?

5. Select two different items in your classroom and discuss whether or not the items had to be packaged, and if so, why?

6. What types of occupations are required to properly plan for production?

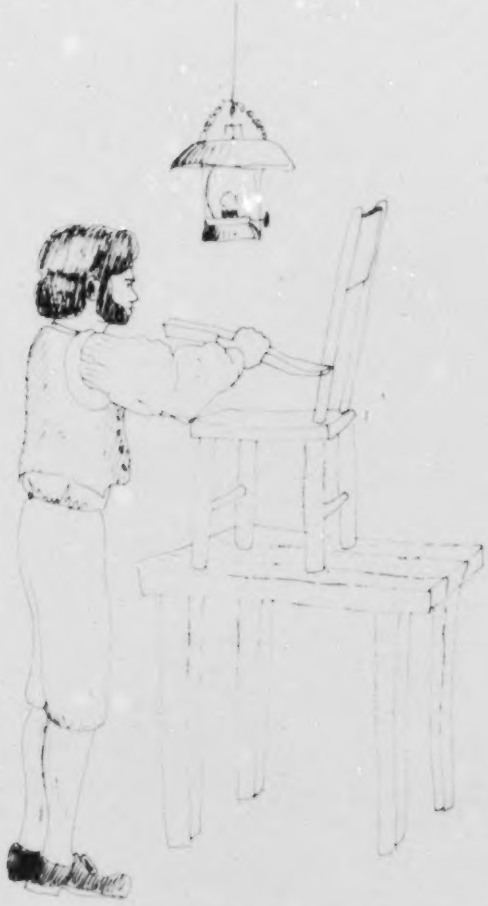
BEST COPY AVAILABLE

PRODUCTION

Production can be thought of as that part of the manufacturing process where natural resources are changed into useful products. In a furniture factory, wood is changed into products such as chairs or tables. Metal, plastic, rubber, glass, and fabric are changed to become a car in the automobile industry. Production is actually the process of making things.

The Old System

Some time ago, all things were made on an individual basis, mostly in small one-man shops. A skilled craftsman, contracted to make a chair, carefully selected the wood needed to complete the job. He then made the legs, back, seat, and arm rests. After all of the parts had been completed, he assembled them to make the chair. After sanding, he applied the desired finish. More than likely, if the chair was to be delivered to the customer, this same craftsman also did that.



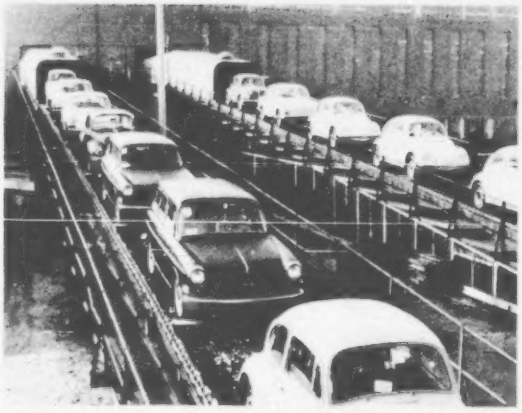
The point is that with the old system of making things one worker usually did the entire job from start to finish. Such people took a great deal of pride in their workmanship.

Modern Mass Production

With the exception of products made in the home workshop and a small amount of custom work, most things made today are not produced on an individual basis. The Industrial Revolution, machines, subdivision of labor, interchangeable parts, and advanced technology have all been responsible for changing our methods of production. Most products today are mass produced in large factories. No longer does one person work on a product from start to finish.

In a modern furniture plant today we may find a hundred workers all having some part in the making of the chair mentioned in the example above. Each worker performs some operation on the chair and repeats that same operation over and over on chair after chair. Working together these 100 workers can produce 100 chairs in approximately one-fourth the time it would take an equal number of craftsmen to build one chair each. There is no

BEST COPY AVAILABLE



New cars roll out of the plant every few seconds — 16 hours each working day at Volkswagen's home plant in Wolfsburg, Germany.

doubt about it — Mass production gets things built much faster than can be done on an individual basis.

But rate of output is not the only advantage of mass production. Let us look at the training requirements of the craftsman who does the complete job as compared to the production worker who performs only one operation. The craftsman must know how to use all of the machines and tools used in making the chair. He must also know how to perform all of the operations required to make the chair. Training such as this may take years. The production worker, because he only performs one operation, needs to be taught how to operate only one machine or one tool. Such workers can be trained in a very short time. Most workers can be given the instructions needed to perform their operation in only a few minutes. After that it may take several hours or several days for them to become really skillful at the task. But in this short period of time, they do become highly skillful and can perform their jobs with amazing speed and accuracy.

Because each worker does only one operation and repeats it again and again, his job can be studied to find the most efficient way to do it. This is called time and motion study. Through such study, the best method to do the job can be learned; and all lost motion, unnecessary action, strain on the worker, or inefficient work habits can be eliminated. The speed at which most production workers perform has been brought about through the efforts of time and motion study.

Assembler at IBM plant wires computer panels with the aid of the computer controlled system that she is watching.

Steps in Mass Production

Mass production can be divided into three major steps. These are:

1. Parts manufacture
2. Subassembly
3. Final assembly

Most products which are used today went through these three steps before they

BEST COPY AVAILABLE

came to us. Let us see what is involved in each one.

Parts Manufacture

Most products are made up of a combination of many parts. Just within your home the refrigerator, dishwasher, garbage disposal, toaster, oven, stove, washing machine, clothes dryer, furniture, clocks, radio, stereo, television, lamps, sewing machine, and hair dryers are products made from many parts. Parts, of course, are such items as gears, pulleys, belts, springs, bushings, rods, valves, brackets, hoses, clamps, nuts, bolts, housings, and body shells. Such parts alone have no practical value, but when put together with other parts, they become useable products.

The first step toward producing a product is to make all of the parts required to build it. Each part, whether large or small, must be made to exact size, shape, and description so that all are exactly alike.

Parts must be made before any products can be assembled.

This makes them interchangeable, which is a requirement for mass production. Interchangeability allows parts to be put together with other parts without being hand fitted. For a particular engine size, connecting rods and crankshafts are made to size so exactly that any rod will fit any crankshaft and will operate smoothly.

Parts may or may not be made by the company that actually makes (assembles) the finished products which are sold to the customer. An automobile assembly plant may buy finished parts and subassemblies from hundreds of companies which have contracts to supply them with such items. The machinery, setup and methods of work required to make parts are very different from those needed for assembly work.

Subassembly

Because it takes so many parts to make a finished product, the parts are usually first put together into units called subassemblies. These subassemblies are then combined with other subassemblies to make the finished product. This may

Completed subassembly — These heavy-duty torque converters are now ready to be sent to the final assmbly line to be installed in off-highway vehicles.

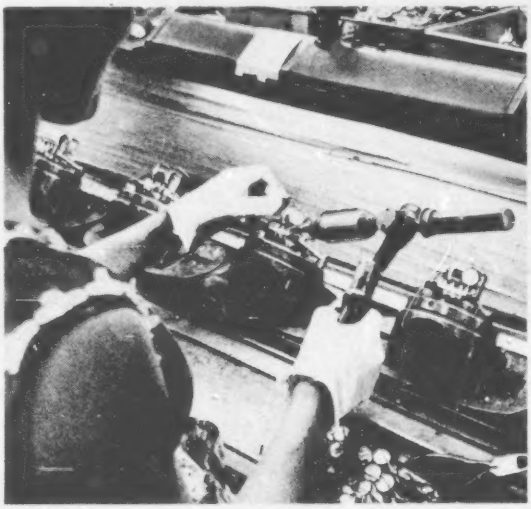
BEST COPY AVAILABLE

sound like double work. Why not just assemble all of the parts once into the finished product? So many parts are involved that the assembling process would be too long and complex and would require so much space that it would be inefficient. An automobile, for example, is made up of thousands of parts. This is too large a number to assemble at one time and place. Therefore, subassemblies are first made, such as an alternator and a starter motor, each of which contains around 60 parts. A subassembly called a fuel pump has about 30 parts, while a carburetor can have over 100 parts. But even such subassemblies as these are still too many to work with during the final assembly of an automobile. So the alternator, starter motor, fuel pump, and carburetor are combined with other subassemblies to make an automobile engine.

Subassemblies can be made at places other than where the final assembly takes place. In fact, thousands of companies across the nation make subassemblies which are shipped to the aircraft, automobile, and appliance assembly plants.

These Western Electric employees are putting together pushbutton dial subassemblies. When completed, these and other subassembles will be combined in the final assembly area into telephones.

Parts are put together into subassemblies on production lines called subassembly lines. These are like the final assembly lines except that there is less variety of parts and work.



Varistors are soldered into network on a telephone subassembly line at this Western Electric plant.

Final Assembly

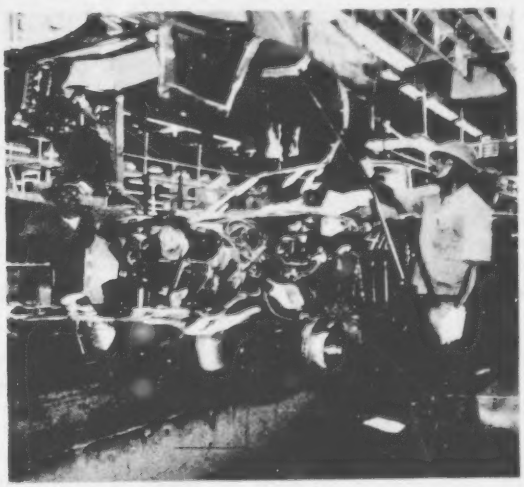
Making the finished product — the television, automobile, or refrigerator — is done during this last step of mass production called final assembly. It is here that all subassemblies and parts are put together. In most cases they are fastened together by such means as nailing, gluing, welding, riveting, clamping, or by using screws or nuts and bolts.

The principle of final assembly is quite simple. Workers, equipped with the tools

BEST COPY AVAILABLE

needed to perform their operation and a stockpile of whatever part or subassembly they need are positioned along the assembly line. The unit to be worked on moves along the assembly line by means of conveyor belt, overhead carriage, track, or whatever method is appropriate. As the unit moves to their position, the workers perform their operation which usually consists of installing a subassembly. When completed, the unit moves down the line and a new unit comes to their position. They perform the same operation again on this unit.

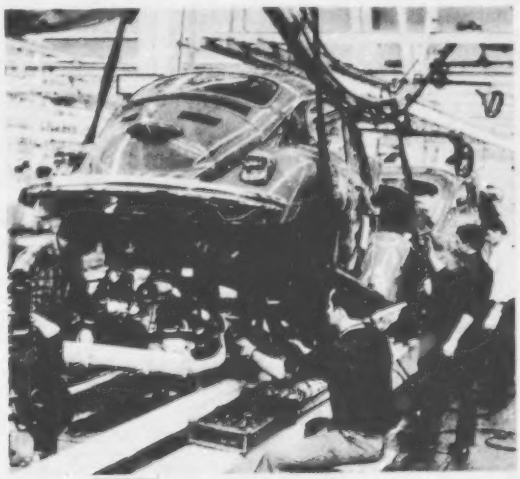
In an automobile assembly plant the process begins with a chassis frame being put on the assembly line. As it moves down the line, parts and subassemblies are attached. About one and a half hours later



After the body of an automobile is lowered onto the chassis, the front end is put in place. These employees are seen here steering the front end into position.

the last operation is performed when a worker drives the finished automobile off the assembly line. Volkswagen builds over 6000 cars in a single day by working two eight-hour shifts at their plants. This means that they have about six cars per minute rolling off their assembly lines.

As was stated, the principle of final assembly is simple; but putting it into effect is another story. For it to work efficiently requires a tremendous amount of planning, coordination, and money. The large amount of money required makes it impractical to even consider the mass production process unless a very large number of units are to be built. Much of the expense involved in setting up an assembly line goes into the conveyor system, which is required for efficient operation. In an automobile assembly plant all of the subassemblies and parts move by conveyor systems to the worker who will



Notice the method used in lowering this body shell as it is mated with its chassis.

install them. And, for many of the subassemblies, special hoists are needed to lift them into position so that they can be installed in the automobile.

Many assembly plants not only have main assembly lines, they have feeder lines as well. As the name implies, some assembly is done on these lines, and the completed work is fed into the main assembly line for future assembling onto the unit being built.

An understanding of final assembly should help you to appreciate the neces-

BEST COPY AVAILABLE

sity of interchangeable parts and the reason for assembling parts into subassemblies. On the line, workers select a subassembly from among the hundreds which have been moved to them, and install it into the unit being built. Any subassembly will fit, because of the idea of interchangeable parts. Because everything must be moved to the workers on the line, it is more efficient to move subassemblies than the hundreds of small parts which compose them.

The designing and engineering of a riding mower have been discussed in another section. What about the actual production of the mower? The mower contains a total of 255 parts (not including standard hardware, such as screws, washers, nuts and bolts). Some of the parts are purchased under contract from other companies, but most are made by the manufacturer of the mower. The parts are put together on subassembly lines into seven main subassemblies. These are fed onto the final assembly line where the mower is completed. Approximately 200 mowers of this type are built each day.

This International Harvester Cadet 55 mower contains 255 parts excluding standard hardware.

Summary

Production, changing natural resources into useful products, no longer is done on an individual basis. Today most products are produced by means of mass production.

Mass production usually consists of parts manufacture, subassembly, and final assembly. Making use of interchangeable parts, subdivision of labor, and modern technology, products are completed on the assembly lines at amazing speeds.

This method of production requires a tremendous amount of planning, coordination, and money to make it efficient. Because of the cost involved in setting up for mass production, a large number of units must be produced for it to be practical.

Words and Phrases You Should Know

Production
Interchangeable parts
Mass production
Time and motion study
Subassembly
Subassembly line
Final assembly
Feeder lines

Discussion and Research Topics

1. Discuss which items in your classroom were built by mass production techniques and which items were built on an individual (custom) basis?

2. Who is credited with introducing the idea of interchangeable parts?

3. What was Henry Ford's main contribution to modern industry?

4. Should more inspection be done during parts manufacture or during final assembly? Defend your answer.

5. What occupations are found in production work?

BEST COPY AVAILABLE

DISTRIBUTION

Distribution is the process of getting the finished product from the place where it is manufactured or processed to the customer who will use it. Practically nothing that you or I buy today is bought directly from the manufacturer. Most of our buying is done at retail stores, and practically

Retail stores play an important role in the process of distribution.

nothing which these stores buy is purchased directly from the manufacturer. Retail stores do most of their buying from wholesale houses who do their purchasing from the manufacturers. The usual cycle of distribution is from manufacturer to wholesaler, from wholesaler to retailer, and finally, from retailer to customer.

Wholesaling

Most goods and products are sold directly by the manufacturer to wholesalers. The wholesaler, sometimes referred to as the "middle man," buys in large quantities. It is not unusual for one or two wholesalers to buy all of the products produced by the company. Wholesalers make their money by buying at a low price and selling to retailers at a higher price. The price which the wholesaler gets when he buys from the manufacturer is called the manufacturer's price. It is sometimes as much as 40% to 50% less than the suggested retail selling price which the final customer pays for the product. The wholesaler takes delivery of the products and puts them in warehouses (stores) until they are sold to retailers. The price that the retailer pays may be 20% to 30% less than the suggested retail price you pay for the product when purchased in the store.

The wholesaler does not necessarily make a profit of 20% on all items he handles. Remember that profit is the money left over from sales after all expenses have been paid. The wholesaler has a lot of expenses. He has the expense of maintaining the warehouse and personnel to operate it, salaries and commissions for office workers and the sales force, plus the cost of materials handling. This materials handling is not only inside the warehouse, but also includes delivery of the products to the retailers.

Retailing

Most of the articles you see in stores are bought from wholesalers. They are purchased at a wholesale price, but are sold to the customer at a price known as the retail price. By the time the merchandise gets into the hands of the customers it

has already been sold twice before, making this the third sale.

Although the retailer bought the merchandise for 20% to 30% less than it sold for, his profit is not that much. He, like the wholesaler, has a lot of expenses. He has his store building to maintain, wages to pay to sales personnel, insurance, advertisement costs, and maybe the expense of delivery service.

Selling Direct

If a company manufactures a product which sells for $100.00 to the customer that is going to use it, why in the world does the company sell it to a wholesaler for $55.00 or $60.00? It seems that the company is losing $40.00 or $45.00 on that product by not selling directly to the customer. The cliche, "it takes money to make money," applies here. In order for the manufacturing company to sell directly to the customer, it must have a retail store or stores. This expense, plus all of the additional expenses involved in operating the store, amounts to much more than the apparent loss mentioned above.

Buying Direct

As customers, we feel that if we could buy everything we needed directly from the manufacturer, we could buy at a much cheaper price because we would be eliminating the wholesaler and the retailer. This belief is partly right, but not completely. The manufacturer's price is always determined by his production expenses plus a reasonable profit. He usually does not become involved in distribution. But if he does, and that is what happens if customers buy directly from him, then the expense of distribution is added to the manufacturer's price. After all, he needs personnel to handle sales and the paper work involved with sales.

A few companies do sell directly to the public, but when they do, the cost of the product includes the distribution cost. Although the price is a little lower than the price asked at the retail store, it is higher than the price which the wholesaler pays. When buying directly from the manufacturer, it is usually a "sight unseen" sort of thing. You do not have the opportunity to examine the product before purchasing. Most people prefer to shop and look the merchandise over carefully before buying.

Chain Stores

Most chain store organizations such as Sears, Penney's, Western Auto, Gibson's and many of the food store chains, do most of their buying directly from the manufacturers or producer, rather than from the wholesalers. Often the organization arranges to have the manufacturer put its chain brand name on the product during production or its label on it during packaging.

These chain organizations are so large that they do their own wholesaling and warehousing. They supply their retail stores from these warehouses. Because they buy in such volume, they get merchandise at prices which are as good and sometimes better than a wholesaler could buy. Such savings can be passed on to the customer at their retail stores. As the parent organization owns the warehouse and the retail store, it can afford to make slightly less profit at each place; whereas the independent retailer must make all his profit in the store. The large chain organizations have these two sources from which to make their profits.

Franchised Dealerships

The automobile industry in this country operates without wholesalers by selling their products directly to the retail outlets. These retail outlets are the thousands of franchised dealers for the various automobile manufacturers. These franchised dealers are independent businessmen who purchase the right to

BEST COPY AVAILABLE

Inside view of a Ford Motor Company dealership.

set up a business and sell a particular type of automobile from one of the manufacturers. Although the manufacturers sell the right to independent businesses to handle their products, they reserve the right to take away that franchise if the businesses do not live up to certain conditions pertaining to sales and servicing. In this way, the manufacturers keep up high standards in regard to the servicing of their products.

Summary

The process of getting finished products from the manufacturer or producer to the customer is called distribution. Usually after a product has been completed, it is sent to a wholesaler. From there it moves to a retailer who operates a store of some type. Most of the selling of products to customers take place at these retail stores.

Words and Phrases You Should Know

Cycle of distribution
Wholesaling
Retailing
Direct buying
Retail price
Wholesale price
Chain organization
Franchised dealership

Discussion and Research Topics

1. What does distribution involve?

2. In the process of distribution, what do the words "middle man" usually mean?

3. Explain the difference between wholesaling and retailing.

4. What occupations are concerned with distribution?

BEST COPY AVAILABLE

ADVERTISEMENT AND SALES

All businesses must sell the goods or services which they manufacture or provide. This is a basic fact of business. The money received from sales makes it possible for a business to meet its payroll, pay mortgages on buildings and equipment, and purchase new materials with which to continue operations. Without sales, no business can survive.

Advertisement

Regardless of how great a product may be or what a good buy it is, sales just do not happen by themselves. People must be made aware that a certain product is for sale. The purpose of advertisement is to bring a product to the attention of the public. Television and radio commercials, and newspaper and magazine ads are four different media used to advertise, but all have the same purpose. That purpose is to put a product before the public.

Outdoor advertisement such as this roadside sign attract the attention of passing motorist.

Advertisement is a multibillion dollar business in the United States. Every business, large or small, must advertise its product; however, most companies are not large enough to have advertisement specialists in their employ. In this case, they contract their advertisement needs to agencies specializing in this line of work. One advertisement agency may do this work for hundreds of businesses. Some of the larger corporations have their own advertisement departments.

Kinds of Advertisement

All advertisement is intended to increase sales volume; however, it is not all designed to bring immediate results. There are actually two kinds of advertisement. Some are designed to increase sales immediately, while others are concerned with long term results.

Promotional advertisement — This kind of advertisement features a particular product or service and is designed to increase sales immediately. Most ads appearing in the daily newspaper announcing a sale at a supermarket or department store are examples of this type of advertisement.

Institutional advertisement — Building goodwill for a product or service is the purpose for which this kind of advertisement is designed. All of the automobile

makers use this kind of advertisement.Commercials on television emphasizing the research, engineering, and testing that go into making an automobile, or the service offered after it is purchased, are examples of this kind of advertisement. With today's emphasis on ecology, many firms show and tell what they are doing to fight pollution through institutional advertisement. Such advertisement is aimed at developing goodwill for the company, which in the long run will result in increased sales.

National, Regional, and Local Advertisement

Advertisement, to be effective, must reach the buying public. Whether advertisement should be national, regional, or local depends on the product market potential. Television sets, kitchen appliances, and automobiles are examples of products sold throughout the country; therefore, national advertisement is in order to help sell these products. Winter sports equipment, such as ice skates, hockey sticks, and skis are not advertised nationally because no market exists for such products in many of the southeastern and southwestern states. Regional advertisement covering the areas of the country where a market exists for such items is the type used. Many bakery products, particularly bread because it loses its freshness quickly, can only be distributed in the local area where it is made. It is logical that advertisement for this product be done locally.

Both national and local advertisement are often used to attract the attention of the buying public for some products. The Ford Motor Company is interested in national advertisement for its cars; but a dealer selling Fords would be more interested in using local advertisement to put the name of his dealership before the public in his area.

Cost of Advertisement

Many large corporations spend millions of dollars each year advertising their products. This is not at all unusual in the automobile, foods, soap, clothing, or restaurant industries, to name only a few. Who pays for this advertisement? The answer is you and me — the consumer. Advertisement, just like the money paid for materials to manufacture a product or wages paid to workers for assembling a product, is part of the expense of doing business. Like material costs and wages, the cost of advertisement is added to the cost of the product and passed to the consumer.

Sales

As has been mentioned, sales are the life blood of any business organization. Whether the organization produces a product or offers a service, that product or service must be sold to someone. Without sales no business can continue operations.

For sales to take place, there must be a seller and a buyer. This is the consumer. People have a tendency to think of the seller as being someone who operates a store and the consumer as being the general public who purchase products to meet their needs or pleasures. This is correct, but it is not the whole story of the seller and consumer. Manufacturing industries produce products to be sold, but they are also large consumers as well. In fact, businesses of all types are both sellers and consumers.

The lawn mower company we have been tracing will sell the riding mowers which it manufactures. But it is also a consumer of the products of other industries. They must buy parts and subassemblies from other companies to assemble the mowers. Companies which sell parts and

BEST COPY AVAILABLE

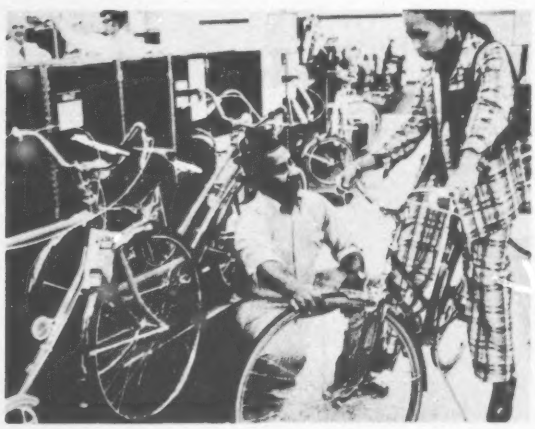
subassemblies are also consumers, as they must buy materials from still other companies to make their products.

Most products that you and I buy for our own consumption or use have already been bought and sold perhaps twice. For example, this would be true if you purchased from a department store one of the riding mowers. The department store, a retailer, purchased the mower from a wholesaler, who purchased it from the manufacturer. After several years of use you may trade the mower in on a newer model. But even this may not be the end of the mower, because the dealer may resell it as a used mower to still another customer.

Retail Selling

Most products used by the general public are purchased through retail outlets. This means the product has already moved from the manufacturer or producer to the wholesaler and then to the retailer where it will be sold to the buying public. There are four ways in which retail selling takes place. You and your family have probably purchased items through each of these four ways. Let us examine each to see what is involved.

1. Over-the-counter selling. This type of retail selling is done in stores of all types, such as department stores, hardware stores, shoe stores, food stores, etc. The customer visits a store, sees the merchandise, makes a selection, and purchases the items wanted. More merchandise is sold to the general public by this method of retail selling than any other.



At retail stores, customers can examine the merchandise before purchasing.

2. Mail-order selling. This method of retail selling is done through catalogue or printed advertisements. Everyone is familiar with buying through the Sears, Montgomery Ward, or Spiegel catalogue. Many other stores announce sales by printed advertisements in the newspaper. Magazine and insurance offers come continously to your house by means of the mail.

In this method of selling, the customer does not visit a store. Instead, the purchase is made through the mail or the order may be placed over the telephone. The merchandise is then mailed or delivered to the customer.

3. Automatic vending machine selling. Every year billions of dollars of merchandise is sold by means of automatic vending machines. The customer deposits money into a vending machine and receives the purchased goods immediately. Some time ago vending machines were used primarily for the sale of soft drinks, cigarettes, and postal stamps. Today, however, thousands of items are sold by this method. One of the more recent introductions into vending machine selling has been gasoline at self-service stations.

4. Door-to-door selling. As the name implies, this method of selling involves a salesperson calling at the home of a prospective customer to show and explain the products for sale. This method of selling was made popular by Mr. Fuller, selling his Fuller Brush products. Cosmetics, encyclopedias, vacuum cleaners, and cookware are examples of products whose companies make use of this method of selling. Usually when this method of sell-

BEST COPY AVAILABLE

Avon cosmetics are sold by means of door-to-door selling.

ing is used, the product is not sold in retail stores.

Which of the four methods of retail selling is best for a particular product? This question is asked daily in the business world. The answer is given by people with special training and experience in the art of selling. Successful companies have such people on their staffs because of the importance of sales. Without sales no company can survive.

Cost of sales

People engaged in selling must be paid for their work. Some salespeople are paid a straight salary. Regardless of how little or how much they sell, their pay is the same. Most salespeople in stores, over-the-counter selling or mail-order selling, are paid a salary. Occassionally, however, during special sales these people may also be paid a small commission as an incentive to boost their sales efforts.

Most people engaged in door-to-door selling, and some others selling expensive products such as automobiles, usually are paid on a commission basis. This means they are paid only when they sell something. Commissions often are between 5% and 10% of the selling price of the product. The salespeople realize that the harder they work the more money they will receive.

Where does the money come from to pay the salespeople? You have probably guessed by now. Whether salary or commission, it is still an expense; and just like materials, wages paid to workers, or advertisement, it is added to the price of the product. Therefore, the consumer pays it.

Summary

In order for a product to sell, people must first be made aware of that product. The purpose of advertisement is to bring the product to the attention of the buying public and create a desire for the product. To be effective, advertisement must cover the market area in which the product will be distributed. Advertisement costs are considered an expense of producing and distributing the product and are passed on to the customer.

Sales are vital to all companies. Some companies sell their products to other companies, whereas other companies sell their products to the general buying public. Most products purchased by the public are sold by means of retail selling.

Words and Phrases You Should Know

Advertisement
Promotional advertisement
Institutional advertisement
Buying public
Market potential
Retail outlet
Over-the-counter selling
Mail-order selling
Door-to-door selling
Automatic vending machine selling
Commission
Market area

Discussion and Research Topics

1. Find an example of each type of advertisement in a newspaper or magazine and explain what each is designed to do.

2. What determines whether advertisement is done on a national, regional, or local basis? Find in newspapers or magazines examples of each.

3. Select an item in your classroom and prepare an advertisement poster about the item.

4. Make a list of items which are sold in vending machines.

5. What occupations are found in the advertisement industry?

6. What occupations would be found in a large retail store?

TERMINATION OF A CORPORATION

Each year in this country close to one-half million corporations go out of business. The process of going out of business, or terminating the business, is called dissolution. Although for most corporations dissolution is brought about because of business failure, this is not the only reason why businesses end. There are two types of dissolution — voluntary dissolution and involuntary dissolution. Let us examine each type closely to learn what each means.

Voluntary Dissolution

Voluntary dissolution means that a corporation decides to terminate its business without being forced to do so. Why would a corporation voluntarily decide to go out of business? There are many reasons, among which are:

1. Consolidation or merger purposes
2. Expiration of charter
3. Stockholder's concern about future of corporation

Consolidation and merger are legal procedures whereby two or more corporations unite to form a single corporation. Although the result is the same, that of forming one corporation, the procedures differ. In the merger, one corporation gives up its charter and is absorbed by the other corporation which keeps its original charter and name. In the consolidation, however, both corporations give up their charters and incorporate under a new charter and name.

MERGER

Atlas Corp.
Dixie Corp. 〉——→ Atlas Corp.

CONSOLIDATION

Southern Corp.
Western Corp. 〉——→ American Corp.

Whether consolidation or merger, dissolution is necessary for one or both of the corporations.

Another reason for voluntary dissolution of a corporation is the expiration of the charter. Often a corporation is chartered for a certain period of time. In this case, unless an extension of time is requested, the corporation is automatically terminated at the expiration of the stated period of time.

Voluntary dissolution may also come about, and quite often does, by the consent of the stockholders. If the business appears to be on shaky ground or if the board of directors makes decisions which to the stockholders seem unwise, the stockholders consent to dissolve the corporation. This can be done any time at a duly called and held meeting of the stockholders. If the resolution to dissolve is passed by a majority vote of the stockholders, dissolution of the corporation takes place.

BEST COPY AVAILABLE

Involuntary Dissolution

Involuntary dissolution means that a corporation is forced to terminate its business and give up its charter. Usually this force is applied by someone outside of the corporation. In many cases the state, through the courts, forces a corporation into dissolution for the following reasons:

1. Fraud in securing a charter
2. Failure to meet state regulations
3. Performance of wrongful or fraudulent acts
4. Bankruptcy (unable to pay its debts)

Bankruptcy is perhaps the most common reason for involuntary dissolution. Bankruptcy is usually brought on by bad management, lack of operating capital, inefficient production, inferior products, poor salesmanship, or a combination of these factors. The inability to pay its debts, however, does not automatically terminate the existence of the corporation. In most states, the creditors commence proceedings to dissolve the corporation. Through court proceedings the creditors force the corporation into bankruptcy. If this happens, the corporation is forced to sell all of its assets (land, building, machines, supplies, and unsold merchandise) and pay the creditors. If there is any money left, it is divided among the stockholders. After this is done the corporation no longer exists.

Dissolution Procedure

After the decision to terminate the corporation is reached, a certain procedure is followed for dissolution. This procedure is referred to as winding up the affairs of the corporation. In the case of a voluntary dissolution, the stockholders of the corporation approve, by majority vote, the dissolution. The board of directors then applies to the state for permission to surrender its charter. Many states have laws which require corporations to settle their debts before returning their charters. Once the corporation is dissolved, it is legally nonexistent and can no longer carry on the duties for which it was chartered. One exception to this, however, is that is has the right to convert assets into cash (sell everything it owns). The money

Through sales such as this, businesses convert their assets into cash.

received from the sale of the assets is used to pay all debts. Whatever money if left is divided equally among the stockholders on the basis of how many shares each owner has. The corporation, with the acceptance of the returned charter by the state, is now officially ended.

If dissolution is involuntary, the stockholders do not vote for or against dissolution because the corporation is being forced to terminate its business. The state usually appoints someone to wind up the affairs of the corporation. This person is called a receiver or a liquidator. His duty is to oversee the selling of the corporation's assets and to see that the corporation reaches some kind of agreement with its creditors.

The sale of the assets of the corporation, of course, nets some money; but it is unlikely that it is enough to pay the full amount of the debts. Some agreement such as 10 or 20 cents on the dollar, therefore, is reached with the creditors.

Many states have laws pertaining to the cash distribution after dissolution. These laws state the order in which payments must be made, such as:

1. Payment of all taxes
2. Payment of mortgages and liens against the corporation
3. Payment of other outstanding debts
4. Payment to stockholders

As a rule, the settlement of the debts in an involuntary dissolution does not leave any money to be divided among the stockholders. When this happens the stockholders lose the money they have invested in the stock because the corporation no longer exists.

Summary

Dissolution is the process whereby a corporation is terminated. In most cases the dissolution is involuntary brought on by business failure, and the state takes away the corporation's charter. A receiver or liquidator is appointed to wind up the affairs of the corporation.

Some dissolutions are voluntary, however, due to consolidation or merger purposes, expiration of the charter, or because of the stockholders' majority vote to terminate the corporation. When this is the case, all of the corporation's assets are sold, all debts are paid, and remaining money is divided among the stockholders. The charter is returned to the state, and the corporation no longer exists.

Words and Phrases You Should Know

Dissolution
Consolidation
Merger
Voluntary dissolution
Involuntary dissolution
Bankruptcy
Liquidator

Discussion and Research Topics

1. Discuss the difference between consolidation and merger.

2. Have any of the businesses in your community failed recently? If so, discuss some of the reasons you believe could have been the cause.

3. What types of occupations would be represented in business dissolution procedures?

PART TWO

YOUR STUDENT BUSINESS

INTRODUCTION

You and your classmates are about to become part of the American system of free enterprise, just as other people do when beginning new businesses. About one-half million new business are started each year in the United States. Some of these become very successful; others just struggle along, but many fail. What happens to your student business will depend on the interest taken in the endeavor and how hard you and your classmates are willing to work. Beginning and operating this business will certainly be a real learning experience in the free enterprise system, but is also should be a lot of fun.

The attitude taken by both you and your classmates toward your student business is all important . If thought of as just another class run by the teacher with you doing just enough work to get by, your business is doomed from the start. But this is not just another class, and it is not run by the teacher — it is operated by you and your classmates. It's your class, your business, and your decisions; and your work will determine your success or your failure.

To help finance the student business, you will be required to buy a share of stock in the corporation. This makes you a part owner of the business. Like millions of other Americans who own stock in corporations, you will become an investor. What happens to your investment depends on you. You could lose part or all of your investment, you might get it back, or you could get it back with a nice profit. It all depends on the outcome of your business, and that's up to you.

An Overview of the Business

Let us take a quick look at the entire business cycle in which you are about to become involved. Understanding the big picture often makes details easier to see.

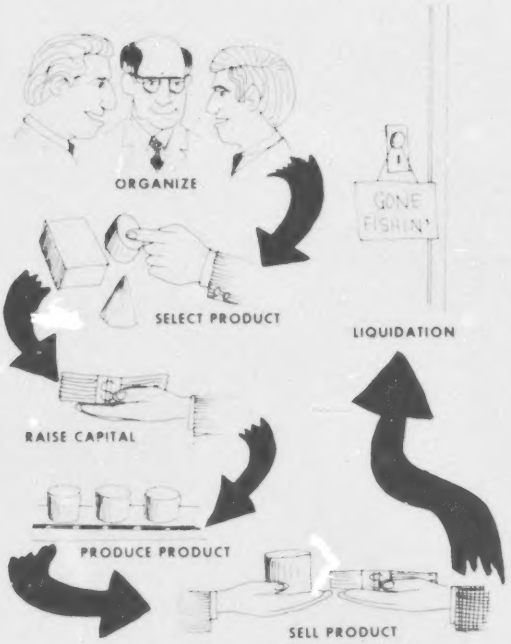
Your business will be of the corporation type because of the method used to meet your capital requirements. The very first order of business is to select a name and to establish the corporation. The board of directors will be all the students in your class, for you will each purchase one share of common stock. This board of directors must elect the president and other major officers to supervise and run the corporation.

Your corporation has been established to make a profit. To do this, it is necessary to manufacture and sell a product. Therefore, a product must be selected that can be manufactured by your organization. It will be necessary to raise whatever working capital is needed through the sale of preferred stock in the corporation.

As production is taking place on the products, an advertisement campaign must be underway to bring the product to the attention of the public. As products are completed, your sales program may begin and will end when all products are sold.

Your corporation will then be dissolved. This process involves selling all unused supplies and materials, paying off the stockholders, and declaring any dividends that your corporation may have earned. The business cycle has now been completed.

BEST COPY AVAILABLE



A pictorial overview at a glance.

Requirements for Success

For your business to be successful much has to be done. Getting these things done will require cooperation and a willingness to work on the part of all class members. Cooperation means much more, however, than just everybody working together. It involves respect and acceptance of the decisions of others; depending on others to do certain tasks assigned; and doing certain jobs assigned to you, because others will be depending on you. Your student business cannot be successful if it is a "one man show." Everybody must cooperate, pitch in, and do his share.

Since this is a business, it should be conducted in a business-like manner at all times. Horseplay has no place in the classroom or shop; and if your business is conducted correctly, you won't have time for it.

A word of caution is needed about time because it has a way of slipping by. Your student business has to start and finish within the period of time assigned for this activity. Plan a timetable carefully, stick to it, and make every minute count.

Everybody Is a Worker

No real business can operate if everybody is a chief and there are no braves. Certainly leaders are needed, but there must also be workers to do the work. Your student business will need leaders to accept responsibilities, make decisions, plan and organize the work, and issue orders. But when there is work to be done, whether in connection with manufacturing the products or selling them, everybody in the organization becomes a worker. The vice president of production may issue the order to begin manufacturing, but then he should take his place on the production line like everybody else. The vice president of sales may plan the sales program, but he becomes just another salesman like all other members of the class. Remember, you can't run a manufacturing corporation without workers.

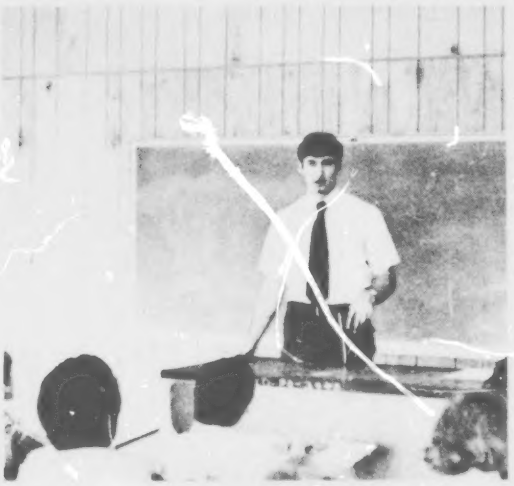
This won't get the job done. Everybody must do their share of the work.

BEST COPY AVAILABLE

Role of the Teacher-Advisor

The business is operated by the students with the teacher serving in the capacity of an advisor. He is, therefore, referred to as the teacher-advisor.

Although students do run the business, it must be realized that it will take some time, usually a week or two, before the business is established and major officers are elected. Until this time the teacher-advisor will conduct the class with the intention of getting the business formed as quickly as possible. Then it will be truly student operated.



An orientation to the Free Enterprise System must be given the class by the teacher-advisor.

The responsibility that your teacher-advisor has must always be kept in mind. He alone is responsible to the school principal for the maintenance of his class and the safety of the students in that class. This makes it necessary for the teacher-advisor to take roll, issue passes to leave the room, handle other school administrative matters, and see that the class starts and stops on time. Concerning safety, there can be no questions. The teacher-advisor has complete authority in this area. Whatever safety training, prior to using any equipment in the shop, is required by the teacher-advisor must be strictly followed. His permission must be obtained before using any equipment in the shop.

Your teacher-advisor may not have the answers to all of your questions or solutions to all problems that might arise. But remember, he has some answers and some solutions. He has been through this student business before with other classes. He has learned some of the pitfalls to avoid and some solutions to problems that worked well before. Seek his help and advice.

How the Business Operates

Your student business, like any real business, must operate in a manner that is efficient if it is going to make a profit. There are just too many things to do, and too little time in which to do them, to allow the entire class to work together accomplishing one thing at a time. A system is needed that will allow just about everything that has to be done, to get underway and take place at the same time. The solution, of course, is to divide the class into different departments, giving each definite responsibilities and assignments. This is exactly how a real business operates. Each department will be headed by a vice president who, together with his staff, must find solutions to problems that arise in connection with accomplishing their assignments. But in some way the work of the various departments must be coordinated. That is the job of the president of the corporation. He must keep up with the work being done in the various departments and be ready to provide help if it is needed.

Responsibility to Get the Job Done

Through this system of departments within the corporation, responsibility for getting work done is easily fixed. Because each department has certain work to do, it is usually easy to tell if the work is being done correctly and efficiently or not at all.

When work is not done it is the fault of the department head, even though some of his workers may be directly to blame because of their horseplay, absence, or unconcerned attitude. That department head should have corrected the situation before it affected the work within his department.

Everybody in the corporation is responsible to someone. Workers are responsible to their department heads. (They can be responsible to section heads if the department is very large, therefore requiring subdivision into sections.) The department heads, who will be vice presidents in your student business, are responsible to the president of the corporation. Even the president has someone to answer to; he is reponsible to the board of directors of the corporation.

BEST COPY AVAILABLE

ORGANIZING YOUR STUDENT BUSINESS

Your student business, like any real business, needs organization. The fact that everybody is enthused, excited, and willing to pitch in to get the corporation going means that you are off to a good start. But this is not enough. Just how are jobs going to be assigned? A few points to consider are:

Who will design the stock certificates?

Who will do the marketing research necessary for the correct selection of the product?

Who will prepare the drawings of the product?

Who will purchase the paint needed to finish the product?

Who will get permission to set up a sales booth in the shopping mall?

These are just a sample of the hundreds of questions that must be answered during the time that your student business is operating. Sometimes if you wait until the question or problem comes up, providing the answer or solution may take more time than you can afford. What is really needed is a system that will provide most of the answers and solutions before the questions or problems even arise. You can have such a system if the business is organized correctly.

Designing an Organization

A workable organization for a business can be developed by examining closely the reason for which it was established. Your student business has been established to produce and sell a product at a profit. Immediately this

Guest speakers are a big help in solving problems facing your student corporation.

suggests the need for two departments — production and sales. Each of these departments will have the responsibility of planning their work and carrying it out. This means for the production department, producing all of the products, and for the sales department, selling these products. These will be the two most important departments in the organization, because how well they do their jobs will determine the success or failure of the business.

Because these departments are so important, something must be done to make them as efficient as possible. This can be done by freeing them of all tasks not directly involving production or sales. The production department particularly, but also the sales department, must have materials and supplies with which to do their work. Each department could perhaps purchase these materials and

BEST COPY AVAILABLE

supplies by themselves, but the paper work and bookkeeping involved takes them away from their main jobs of producing or selling. So your student business, like all real businesses, needs a purchasing department. This department's responsibility will be to purchase all materials and supplies and make them available to the various departments as they are needed.

Both the production and sales departments must be staffed with people to do the work. This involves recruiting, interviewing, screening, selecting, and inducting workers for the organization, not to mention the paper work and record keeping involved. Once again, perhaps production and sales could handle this themselves; but it takes them away from their main responsibilities. A personnel department, therefore, should be included in the organization. Their main responsibility will be to provide the workers for the various departments as they are needed.

Other departments that will be needed include engineering, marketing research, public relations, and advertisement. In each case, these departments will have responsibilities for certain assignments, therefore relieving the production and sales departments from doing them.

Each of the various departments within the corporation should be headed by a vice president. He should have a permanent staff consisting of two to five people to help plan and conduct the duties of that department. (These numbers may have to be adjusted to fit class enrollment.) Two departments, however, will sometimes require the efforts of the entire class. These departments are production and sales. During the actual time that production is taking place and during the time when the sales program is in full swing, all other members of the class not already permanently assigned will temporarily be shifted to these departments.

Work Must Be Planned

Always remember the reasons for forming departments within the organization. It increases efficiency by letting people specialize in certain areas of work, it fixes responsibilities for getting things done, and it also allows all of the work to get underway at the same time. The latter is possible only if all of the departments fulfill their responsibilities. If a department does not do its work correctly, it could delay the work of other departments. Each department, therefore, must know exactly what it is supposed to do and carefully plan its work so that it will be completed.

Specific instructions for each department will be given later, but there are some general areas of planning that apply to all departments.

Some jobs can best be accomplished by all members of the department working

Small group discussions can be used to solve problems.

together. Other jobs may be done best if they are assigned to one or two members of the department. Regardless of the method used, planning is essential.

Planning in some cases may involve subdividing the department into smaller

BEST COPY AVAILABLE

sections to allow for more efficient work. For example, the production department may be divided into a manufacturing section, an assembly section, and a finishing section. Where this is done, section heads should be appointed and placed in charge to supervise the workers assigned to the sections.

Careful planning includes thinking about problems that might arise and working out solutions to these problems in advance in case they do happen.

A good planning device is to set completion dates (also called target dates) for jobs within the department. In this way you set certain goals and then try to have the work finished by those dates. Completion dates are very important when the work being done affects other departments. It provides a system by which other departments can check to see if you are planning your work to fit into their schedules.

Planning should include making alternate plans. It's always best to have a second method worked out and ready. If for some reason the first method can't be used, you can use the alternate plan without causing any delays.

Finally, to insure that the work of the corporation runs smoothly, plans must be made to enable the vice presidents to know exactly what progress their individual departments are making. This may require some type of reporting system. The vice presidents will need this information when attending meetings and planning sessions with the president of the corporation.

Election of Officers

All organizations, whether they be social clubs, churches, schools, or businesses such as yours, need people in responsible positions to provide leadership. Witnout leadership nothing seems to get done. With proper leadership, however, reaching your objectives will be much easier. The officers elected by you and your classmates will provide the leadership required to make your business successful.

Your student business will need six elected officers. These will be the president, corporate secretary, treasurer, vice president of manufacturing, vice president of sales, and vice president of personnel. There will also be a need for other key personnel to serve as department heads and managers. But these positions can be appointed later as the need arises.

Electing the right people to fill these positions is extremely important to the success of your business. By no means should the election be considered a popularity contest. Your teacher-advisor will appoint three students to serve as members of a nominating committee. It is the duty of this committee to carefully consider all members of the class in light of their abilities, attitudes, interests, and enthusiasm. They should nominate the best qualified students for these offices. At

The teacher-advisor conducts the election for the corporation president. The president-elect will then handle the elections for the remaining corporation officers.

BEST COPY AVAILABLE

a board of directors meeting the nominating committee will present their nominations. Other students can be nominated from the floor. After the nominations have been closed, the class will vote and the elected officers will be announced.

The duties of the elected officers are as follows:

President

The president presides at all company and board of directors meetings. He will, with the assistance and recommendations of the vice president of personnel, appoint all department heads and managers. He will, with the assistance of the teacher-advisor, plan and schedule all operations of the corporation.

The president has the responsibility for the overall supervision of all actions of the company. He must be aware and check regularly on the work of the other officers of the company. He has the power to sign checks and other legal documents of the company.

Corporate Secretary

The corporate secretary will insure notice of all stockholders' meetings, take minutes at all meetings, and maintain an up-to-date list of all stockholders. He will carry on all company correspondence.

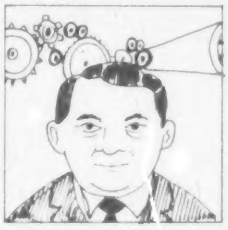
The corporate secretary is the custodian of all company papers such as the corporation charter and by-laws. He must also assume the responsibility for publishing the annual report.

Treasurer

The treasurer will be responsible for maintaining the checking account and handling all company monies. He must keep the company's financial records accurate and up-to-date and be prepared at all meetings to give financial reports.

The treasurer has the power to write and sign checks.

Vice President of Manufacturing



The vice president of manufacturing, with the assistance of the teacher-advisor, must plan all aspects of the production program. He must set up the production line and is responsible for efficiency, quality, and safety. He must requisition all tools and materials needed for production. His duties include assigning, training, and supervising all production workers.

He may appoint a safety director, a research and development manager, a quality control manager, and a purchasing manager to assume certain specific responsibilities pertaining to production.

Vice President of Sales

The vice president of sales, with the assistance and advice of the teacher-advisor, plans and supervises the advertising and sales program for the company. He is the chief sales officer for both corporation stock and the company product. He is responsible for training all

BEST COPY AVAILABLE

members in good sales techniques, as well as developing and promoting sales incentives. He maintains sales and commission records and must be prepared to give sales reports at all meetings. He is responsible for requisitioning all materials and supplies needed in connnection with advertising and sales.

He may appoint an advertising manager and a sales promotion manager to assume certain specific responsibilities.

The vice president of sales will take charge of the company in the absence of the president.

Vice President of Personnel

The vice president of personnel has the responsibility for keeping complete information on all members and should recommend to the president and other officers those members best qualified to serve as department heads and other assignments. He is charged with the responsibility of recording attendance at all meetings and during production. He figures the payroll and submits this information to the treasurer at the end of each accounting period. He must check on absentees, trying at all times to keep 100% attendance on the part of all members.

He may appoint a time keeper, a public relations manager, and an awards manager to assume certain specific responsibilities.

Other Appointed Officers

As your business begins to get underway, there may be a need to appoint department heads to assist the various vice presidents by assuming specific responsibilities. Vice presidents should consult the personnel vice president for his recommendations concerning the best qualified individuals fo fill various positions. He may wish to interview certain members before making such recommendations. This information is then passed on to the president who will make the appointment.

Although these positions are very important, they need not be filled until there is a definite need. You may find your company in the position of having all "chiefs and no braves" with no one left to do the work.

The duties of the various department heads who may be needed in conducting your business are as follows:

SAFETY DIRECTOR: The main responsibility of this important assignment is to maintain an accident-free atmosphere during production. The safety director must be constantly alert to locate hazards or unsafe acts which could result in an accident. He should check all tools and machines prior to their use to be sure they are in good condition. He should be on the alert to spot any unsafe work habits or conditions.

The safety director works closely with the manufacturing vice president in training workers in the proper use of tools and machines to be used during production. He should feel free to call on the teacher-advisor to assist in the elimination of any "horseplay" because this is one of the principal causes of accidents.

PURCHASING MANAGER: The purchasing manager purchases all materials and supplies needed to carry on office work, production, advertisement, and sales. He keeps all requisitions, purchase orders, and invoices and prepares records of purchases for the treasurer.

PUBLIC RELATIONS MANAGER: The main purpose of the public relations manager is to handle all public relations work for the company. He also assists with the preparation of the annual report.

ADVERTISEMENT MANAGER: Working closely with the sales vice president, he will be responsible for advertisement and promotion of the company product.

AWARDS MANAGER: The awards manager will be responsible for developing an awards incentive program for either production, or sales , or both. All recommendations concerning awards must be presented to the board of directors for approval.

RESEARCH AND DEVELOPMENT MANAGER: This individual will head a committee charged with selecting a product to be produced by the company. These recommendations are presented to the board of directors for approval.

QUALITY CONTROL MANAGER: This person is responsible during production for maintaining established quality procedures to insure high standards of workmanship at all times, resulting in acceptable finished products.

SALES MANAGER: The sales manager will assist the sales vice president by developing sales promotion and will assist with the training of all sales personnel.

TIME KEEPER: The time keeper will be responsible for keeping an account of time worked by all members during production.

Selecting Company Name

Your student company, like all businesses, will need a name. This name must appear on the stock certificates and sales receipts, and it will also be needed when opening a checking account at the bank.

Company names often are indicative of the type of product or service in which they deal. Some include the name of the founder or owner.

The name of your company might include the name of the school, the school mascot, school colors, or some indication of the product to be made. Examples of such company names might be:

Blue and Gray Novelties

Maroon and White Products

Yellow Jacket Lamps

Bulldog Ashtrays

Starkville High Spice Racks

Since your company will not actually apply for a charter of incorporation from the Secretary of State, you should not use the words corporation, incorporated, limited, or Inc. in the company name.

Selecting the company name can be done by the committee method, small group method, or by the entire class. Regardless of the method used, try to choose three or four possible names. These should be presented to the entire class and a vote should be taken to select the company name.

Raising Capital to Get Started

Your company will need money in order to purchase the materials and supplies needed to produce a product. Salaries will have to be paid to the workers; commissions must be paid to the salesmen and a small amount of money will be needed to buy sales receipts and record keeping books. With the exception of the sales commission, all of these expenses will take place before you can depend on income from sales to help pay the bills. What your company needs is working capital — money that will allow you to meet expenses until receipts begin to come in from sales.

The best way for your company to raise the needed working capital is to sell stock, just like all corporations do to raise money. When stock in a corporation is sold it represents ownership in the company. Therefore, the people that purchase the stocks will actually be buying a part of the business.

All of the members of the class should be required to purchase one share of stock which will make them part owners of the company. If the stock is priced at $1.00 per share and there are 24 students in the class, your corporation will begin with $24.00 in its treasury and each stockholder owns 1/24 of the business. This may or may not be enough working capital for the corporation, but don't worry about that now.

Let us stop for a minute and consider just what you have done. You are now a part owner of a business, having one share of stock for which you paid $1.00. At the end of a given period of time that business will be dissolved (ended), and one of three things will happen to your $1.00. First, you could get your $1.00 back. Secondly, you may lose part or all of your $1.00. Or thirdly, you may get your $1.00 back plus a nice profit. With the proper interest, cooperation and hard work, you'll get the $1.00 back plus interest. Even more important than the money, however, will be the learning experience. You will not only be learning about the American system of free enterprise, you will become a part of it.

Once the product to be manufactured has been selected and expense needs determined, it is time to decide if additional capital will be required. This is an easy decision to make. At present the only money in the corporation account is from the sale of common stock — $1.00 multiplied by the number of students in the class. If that is enough to buy the supplies and materials needed to begin production, you will not need extra capital. Most likely, however, this is not enough money; therefore, you will need to raise additional capital to meet the expenses involved in production.

Assuming that more capital is required, the board of directors must authorize the sale of preferred stock. This is the means by which any additional capital needed by the corporation is raised. The estimate of how much money is needed should be as accurate as possible because it will determine how many shares of preferred stock are sold at $1.00 per share. You must raise the capital that you need, but you do not want to sell more shares of preferred stock than is necessary. Since the preferred stockholders will share in whatever profits are made by the corporation, there is no need to divide the profits any more than is necessary.

Two types of stock have been mentioned. It is important that you understand exactly the difference between these two types of stock.

Common Stock

This type of stock carries voting privileges and should be sold only to members of the class. It should be limited to only one share per class member to insure that every class member has an equal voice in the affairs of the corporation. As the only voting members of the corporation, the students in the class make up the board of directors and will make all decisions affecting the corporation.

Preferred Stock

This type of stock does not carry voting privileges. It can be sold to anyone willing to invest in the business. The sale of preferred stock will be your primary source of raising capital once a product has been selected and cost requirement figures determined. Preferred stock has the advantage of being paid off first when the corporation is dissolved. Preferred stock also shares equally in all dividends resulting from profits earned.

Opening a Checking Account

Your student corporation should open a checking account with a local bank. This is not only for the protection of the corporation's funds, but it is the businesslike method of handling money. By having such an account, it will be possible to make all payments by check. As a check is written the check number, date, the person or company to whom the check is made payable, and the amount of the check are recorded in the checkbook. At the end of the month the bank will mail your bank statement and cancelled checks; these serve as receipt of payment. The checking account and this method of making payments will make the job of the corporation treasurer much simpler.

Avoid leaving money in the classroom overnight. As money is turned in from the sale of stocks or products, it should be deposited in the bank. If it is not possible to make the deposit immediately, perhaps the money could be given to the school secretary for safekeeping. Most schools have a vault in which to lock money and other valuables. As soon as possible, however, the money should be deposited in the checking account.

Any employee at the bank will be glad to explain how to open a checking account, prepare deposit slips, write checks, record written checks, and balance the bank book. When opening a checking account, a deposit is made and a signature card is signed. In most student corporations the treasurer and the teacher-advisor must sign all checks written against the account. If this is the case in your corporation, both of these persons will have to sign the signature card when opening the checking account.

Most banks provide free personalized checks which have the name and address of the company printed on them. Banks usually have a monthly service charge of $2.00. Some, however, do not have monthly service charges, but instead charge $.10 for each check written. Which type of charge will be best will, of course, depend on the number of checks that you plan to write. Your banker will explain these charges and suggest which method would be best for your student corporation. Regardless of the method selected, it must be remembered that this bank service charge is an expense of doing business. Just like materials, wages, and commissions, the bank service charge should be considered an expense and taken into account when figuring the price to charge for the products you produce. All expenses must be passed on to the customer.

Wages, Salaries, and Commissions

A large part of the expense involved in doing business goes to compensate (pay) the people who work for the company. Even though all of you are owners of the business because you own stock in the company, you also are doing the work; therefore, you should expect to be paid for your efforts. This adds realism to your student operated business.

Besides adding realism to the business, there is another reason why those who do the work should be paid for their efforts. Remember, there are two kinds of stockholders — common and preferred. Both share equally in whatever dividends are earned as a result of the profits made. Paying wages, salaries, and commissions will, of course, reduce the amount of profits. However, all the work will be done by the common stockholders; therefore, paying them for their efforts is justified.

The board of directors must decide the amount to be paid for wages, salaries, and commissions. In determining these amounts several factors should be kept in mind. These are:

1. Everything in your student operated business is scaled down; therefore, the amount paid will only be a fraction of what would normally be paid in a real business for doing similar work.

2. Wages and salaries should be paid only during the time of actual production — not the entire time that your corporation is in existence.

3. There is no money to pay wages, salaries, and commissions unless it is earned by operating a successful business and making profits from the sales of products.

4. The board of directors may find it necessary to adjust wages, salaries, and commissions either up or down, depending on the outcome of the business.

SUGGESTED AMOUNTS:

As has been mentioned, the board of directors of the company must decide the amounts to be paid for wages, salaries, and commissions. Presented here are suggested amounts for consideration; however, they may need to be changed to meet your situation.

Wages:

Hourly production workers should be paid $.20 per hour (class period). Working one hour per day, five days per week, the weekly wage (without absences) would amount to $1.00

Salaries:

POSITION	PER WEEK
President	$2.00
Corporate Secretary	$1.75
Treasurer	$1.75
Vice President of Sales	$1.75
Vice President of Manufacturing	$1.75
Vice President of Personnel	$1.75
Safety Director	$1.50
Purchasing Manager	$1.50
Public Relations Manager	$1.25
Advertisement Manager	$1.25
Awards Manager	$1.25
Research & Dev. Manager	$1.25
Quality Control Manager	$1.25
Sales Manager	$1.25
Time Keeper	$1.25

(Salaried personnel should be paid more because of their extra assignments and responsibilities. They are, however, expected to help with production as much as possible.)

Commissions:

All members of the company, including the officers, will participate in the sales program. A commission of 10 percent should be considered on all retail sales. Where products are sold wholesale (less than retail price) the commission should be reduced.

SELECTING A PRODUCT TO PRODUCE

If your company is going to make money, it will be necessary to manufacture and sell a product at a profit. (Profit = the money left over from a sale after all cost or expense of manufacturing and distributing the product has been subtracted.)

The product selected to be manufactured and sold by the company must be presented and approved by the board of directors. Before a presentation can be made to the board, however, much thought, research, planning, and hard work will go into the selection of this product. The production vice president may provide the leadership in this selection, or he may ask that a research and design manager be appointed to undertake this assignment. If a research and design manager is appointed, he in turn may wish to form a committee to work on this assignment; or he may prefer to work with the entire class. Regardless of the method chosen, he should begin by giving the group an orientation to help get the selection process off to a good start. Here are some thoughts he should use in his orientation. These are like special "ground rules" outlining how the "game" should be played in your student operated business.

Factors to Consider Before Selecting a Product

Equipment Available

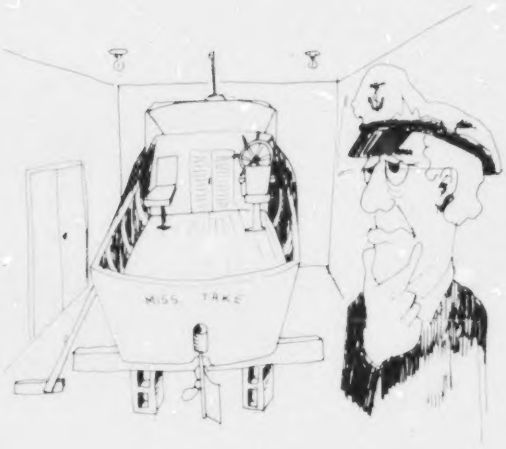
Many corporations could, if they wanted to do so, manufacture many different types of products. Most of them, however, have found it advisable to specialize with only one or two products. There are many reasons for this, one of which would be the equipment (machines and tools) available with which to work. Deciding to produce a new line may require an investment of thousands of dollars for new machinery before operations can begin.

This is a factor that your corporation must consider. Is the laboratory in which your manufacturing will take place equipped primarily for woodworking? If so, it would be to your advantage to consider producing a product made basically from wood so as to use the equipment already in the laboratory. Remember the definition of profit. Profit is the money left over after all expenses have been subtracted. A good rule to follow in all business endeavors is to keep your expenses down to a minimum. Therefore, consider carefully before selecting a product which will require the purchasing of new or additional equipment. If at all possible use what you have.

Space Available

Have you heard the story of the man who built a boat in his basement? He spent every weekend during the fall and winter building the boat so that it would be ready for fishing in the summer. After investing a lot of time and money the proud builder called in some friends to show off his craftmanship. He was beaming with pride until someone asked how was he going to get the boat out of the basement. There was no way! In his desire to have a boat and in his enthusiasm to build it, he had absentmindedly overlooked the necessity of getting the boat out of the basement after completion.

BEST COPY AVAILABLE



A little thought before starting would have prevented this problem.

Your corporation may not face this same problem, but just think for a moment about size and space. Picture in your mind a book case or an end table. Neither project is as large as our friend's boat, but suppose you select one of these as the product you intend to manufacture. Multiply this size by 10, 20, 30, or whatever number you expect to produce; and possibly they will require more work space than you have. Remember that overcrowded working conditions create a real safety hazard. You will need room in which to work.

Something else to consider will be the other classes that use the same laboratory during other periods of the day. They also need room in which to work, so this may necessitate a product small enough to be put away after each period. How much locked storage space is available in the laboratory?

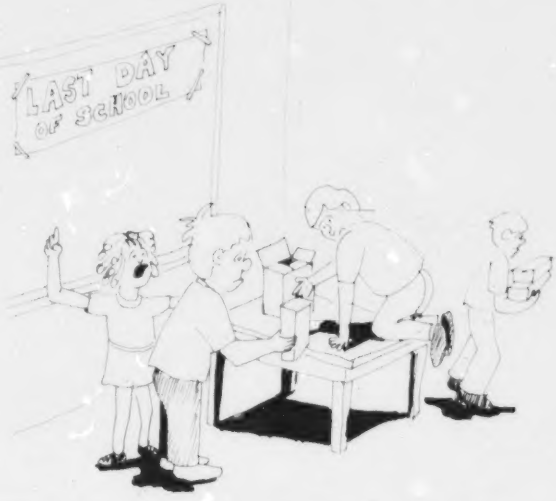
Perhaps there are other things along this same line to consider, due to certain conditions or limitations within the area in which the work will be performed. One thing is for certain, though; it is a lot easier to consider these problems now than to later have to stop production while someone attempts to find solutions to size and space problems. Besides, if you wait until later, it may cost money.

Time Required

Time is a factor which must be considered immediately because it may place some severe restrictions on the product that your corporation will manufacture. Basically the overall plan is to produce, sell, and liquidate the corporation. Pay attention to the last item, because that is when you will get back the money you paid for your stock, plus any dividends that may have been earned.

Most corporations keep producing and distributing, hoping that it will not become necessary to liquidate. Herein lies one of the real big differences between a real corporation and the one that you have formed. You must liquidate and it must be done by the time the school year is over (or perhaps before the school year is over if your instructor has allocated a certain time limit for this unit).

Considering this factor, the product to be manufactured must be one that can be



With proper planning you will not find yourself in this fix at the last day of school.

BEST COPY AVAILABLE

completed within the time limits established. Don't bite off more than you can chew.

Price

It is recommended that the product selected be one that would sell in the $1.00 to $6.00 price range. Most items selling for less than $1.00 would probably be so simple that no real production would be involved. Those priced higher than $6.00 might present some selling problems which your inexperienced sales personnel could not handle.

Sources for Ideas

Working within the ground rules established above, you should be ready to begin the process of deciding on the product which your corporation will manufacture. There are no set rules to follow in this procedure; it can be accomplished in many ways. Regardless of the method used, however, the desired end result should always be kept in mind. That end result is the selection of a product to manufacture. That product must be one that your corporation is capable of producing and selling, and it also is desirable for the product to have the unanimous approval of the entire class.

Briefly stated, one method of selecting a product would be to start with many ideas, to narrow these down to a few, and to select one. This is a simple process. Let us see how you can make it work.

Your first task is to get as many ideas as possible. This can be accomplished by working on an individual basis, in small groups, or as an entire class.

At times getting an idea on something to do may seem like a real problem. All you need to do, however, is to open your eyes. How about looking around your home or school. Perhaps you will see dozens of ideas in these two places alone.

Here is another thought. Remember that your corporation is planning to sell the product after it is manufactured. That should give you a clue. Most selling takes place in stores, and there are probably at least a dozen stores close to your home or school. All it would take is a visit to a few stores and you will see hundreds of ideas. It would be wise to take along a tablet or notebook and make a little sketch of some of the items which look promising. Also jot down the price of the items, as this will be valuable information later when you become concerned with marketing research. Always keep in mind those factors to consider about selecting a product. These ideas must fit into the conditions under which you must work.

Another excellent sources of ideas would be mail-order catalogues such as Sears, Penneys, Montgomery Ward, Spiegel, Western Auto, and others. These resources contain hundreds of ideas. Magazines and newspapers are also good sources of ideas. Also, do not overlook your school library when looking for ideas. Take a look at some "Do-It-Yourself" books. They are loaded with ideas.

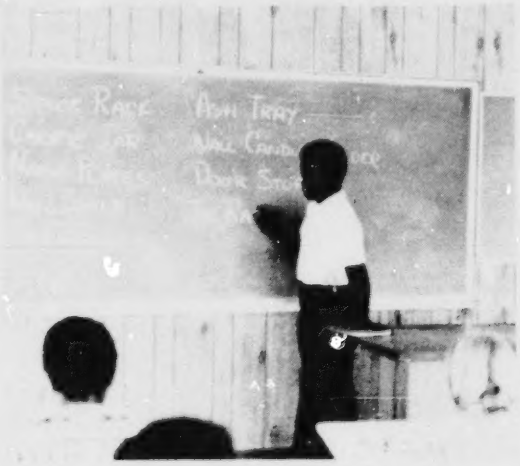
Mail-order catalogues are a good source for product ideas.

BEST COPY AVAILABLE

The library is a good source for product ideas.

Brainstorming Technique

Here is a technique that will produce a lot of ideas in a hurry. It is good with small or large groups. Appoint someone to act as a recorder to write down the ideas as they are presented. (On paper for small groups or on the chalkboard if you are working with the entire class.) Remember that you are just trying to get a lot of ideas, so don't try to analyze each idea as to its feasibility for production. Just start naming things which could be produced, one right after the other. As soon as the recorder has written it down, you are ready for another idea. You will get a lot of bad ideas, but these can be discarded later.



Brainstorming is a method that will produce a lot of ideas for products that your corporation can manufacture.

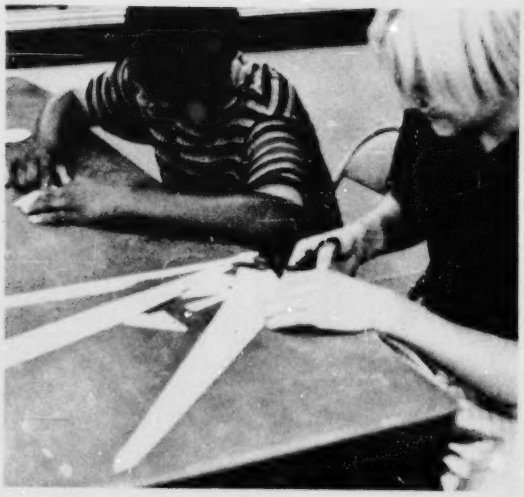
After all ideas have been exhausted, hopefully, you will have quite a long list. The next step will be to begin narrowing down this list to three or four ideas that can be studied more in detail. Many ideas can be quickly disposed of for some of the following reasons:

1. It will take too long to build.
2. We do not have the equipment to build it.
3. It will take more money than we want to invest.
4. To build it will require skills that our group does not possess.
5. It has no practical use.
6. It's too big.
7. People wouldn't pay money for it because companies give them away for advertisement.

Once your class has completed this process, only a few ideas will remain. These are called the "good ideas." Now you must find the "best idea" from these remaining few "good ideas."

A good method of doing this would be to divide the class into small groups with one group for each good idea. Here is where you will do some detailed study to determine if the idea your group is working with should become the product to be manufactured by the company. Each group should include, as part of this detailed study, some basic market research. Discussing the product idea with parents and friends will give you some indication as to its sales appeal. Later each group will give a detailed report to the

BEST COPY AVAILABLE



Paper models help in explaining a design idea to the class.

entire class on the merits of the idea they studied. After all groups have reported, the ideas are discussed and finally one will be selected, based on class vote.

It was mentioned that the final selecting of the product must be approved by the board of directors. Because your class is the board of directors, approval has just been given. Your company now has a product to manufacture.

The selection of the design idea should be voted on by the board of directors.

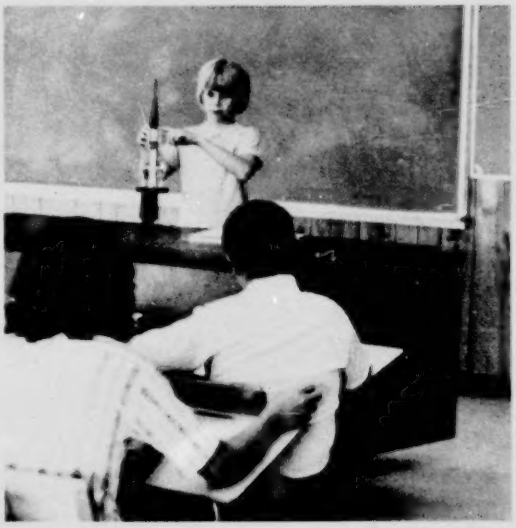
BEST COPY AVAILABLE

ENGINEERING THE PRODUCT

This aspect of production includes:

1. Building the prototype
2. Preparing working drawings
3. Preparing parts and materials lists

The vice president of production is responsible for these assignments; and he may, with the help of a committee, do the actual work. He could, however, ask the research and design manager and his staff to handle this assignment. Regardless of who does the work, the first step is to build the prototype.



The prototype must be presented to the board of directors for approval.

Building the Prototype

The prototype is the original model, a standard, typical example of the real product. It is the same size as the production model; and if it has any movable parts, they should work. Although prototypes are sometimes made from different materials, the main difference between the prototype and the production model is the method used to make it. The production models will be mass produced, but this method is only practical when a large number of products are to be produced. The prototype must be custom-made since only one will be made.

Prototypes are handmade because no means for mass production has as yet been made.

Working from the sketches made previously, the prototype is built using whatever tools or machines are required. Your teacher-advisor will supervise this work closely, being ready to give any instructions on tools, machines, or safety that are needed. All work on the prototype must be done very accurately, because it will be the standard to follow later during mass production.

BEST COPY AVAILABLE

Preparing Working Drawings

After the prototype has been completed, working drawings of its various parts are prepared. The dimensions for the drawings are obtained by carefully taking measurements of the prototype. If the parts contain irregular shapes (shapes other than squares, rectangles, circles, etc.) patterns will have to be made. Sometimes it is easier to make patterns by tracing the outline of the part before the prototype parts are assembled.

In making working drawings it should be remembered that the drawings are

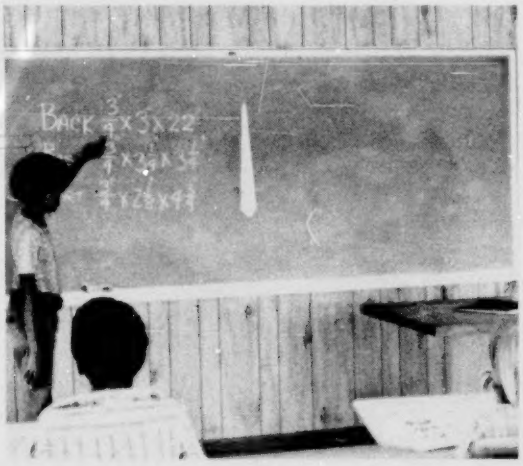
Drawings must be made of the product and its parts.

worthless unless they are complete. Drawings must indicate the material to be used as well as the size and shape of the object and the location of all holes. They must be fully dimensioned. As a test to determine if a drawing is complete you might ask yourself, "Does it contain all the information needed to make the part?" If it does not, you must complete it.

In addition to the working drawings of the parts, a drawing of the assembled prototype should also be made. This will show how the various parts fit together.

Preparing Parts and Materials Lists

The research and design manager and his staff should prepare a parts list and a



Production department personnel must determine the amount of materials needed to manufacture the product.

materials list. The parts list, as the name implies, is a list of the parts giving the part number, the part name, and the number of that part needed to complete one unit. An example of an entry in the parts list would be as follows:

Part No. 5---Side---2 required

The materials list consists of a complete listing of the materials needed to build one unit. In this list you do not use the finished size of the part, but rather the size of material needed to make the part. The types of material must also be mentioned.

Having a parts list and a materials list will be a great aid in requisitioning materials needed to begin production. Once the number of units to be produced has been decided a little multiplication will determine the amount of materials needed to make the total required number of a particular part. In most cases it would be wise to increase this figure by 10 per cent to allow for waste, training, and rejected parts.

BEST COPY AVAILABLE

PRICING THE COMPANY PRODUCT

Price Must Be Competitive

How much money are you planning to ask for your product? The answer to this question is very important to the success of your business. Much thought and planning must be done before you can decide on the price to charge for the items produced. There are two important factors to keep in mind when pricing the product. These are:

1. The sale of products is the company's only source of income. All company expenses, such as salaries, wages, commissions, equipment, materials, supplies, plus whatever profits are to be made, must be recovered from the sale of products.

2. Prices should be in line with those of your competition.

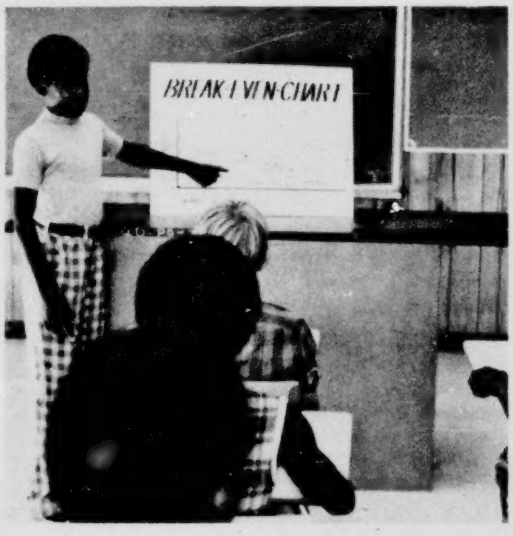
By doing a little marketing research, it is easy to determine what your competition charges. This is done by looking through mail-order catalogues or visiting stores to find similar products. How much do they ask for the item? Since your product should be priced about the same, use this figure as a "trial price."

Using this trial price you can determine what the mark-up will be on each product. The mark-up is the difference between the cost of producing and distributing the product and the selling price. For example, if it cost $.60 in materials and labor to make a product that will be sold for $1.50, and $.15 commission (10%) is paid to the salesman, your total price of producing and distributing the product is $.75. Subtracting the $.75 from the selling price of $1.50, gives a mark-up of $.75.

Does this mark-up mean that your company will make a profit of $.75 every time it sells one of its products? No, because you still have some expenses that must be taken into account. You spent money for supplies for office work and advertisement, a small amount for equipment, and maybe one or two award trophies. What you need to know is the number of products that must be produced and sold in order to pay all expenses that the company has incurred. This number is called the break-even point. Let us take a close look and see what it involves.

Break-Even Point

In a business that manufactures and sells a product, it is important to know what the break-even point is. This break-even



Preparing a break-even-chart is a valuable aid when determining the number of products to be manufactured.

BEST COPY AVAILABLE

point represents the number of products which must be made and sold in order to break even. When a company breaks even, no money is made and no money is lost. Break-even charts are usually made to determine this information, but they are also helpful because they show how much profit or loss the business has at any volume of business. These charts are useful also in determining the volume of business to be obtained, and at times are used to help determine prices.

Using a small business as an example is helpful in understanding the value of a break-even-chart. Assume you decide to go into the photography business. You purchase a Polaroid camera, films, and flashcubes; and you are all set. With this equipment and these supplies, you attend school functions (dances, sports events, etc.) and ask people if they would like their pictures taken with their dates for the price of $1.00.

At this point you may have some questions such as:

1. How many pictures will have to be sold to pay for the equipment?

2. How many pictures will have to be sold to make a profit of $25 or $50?

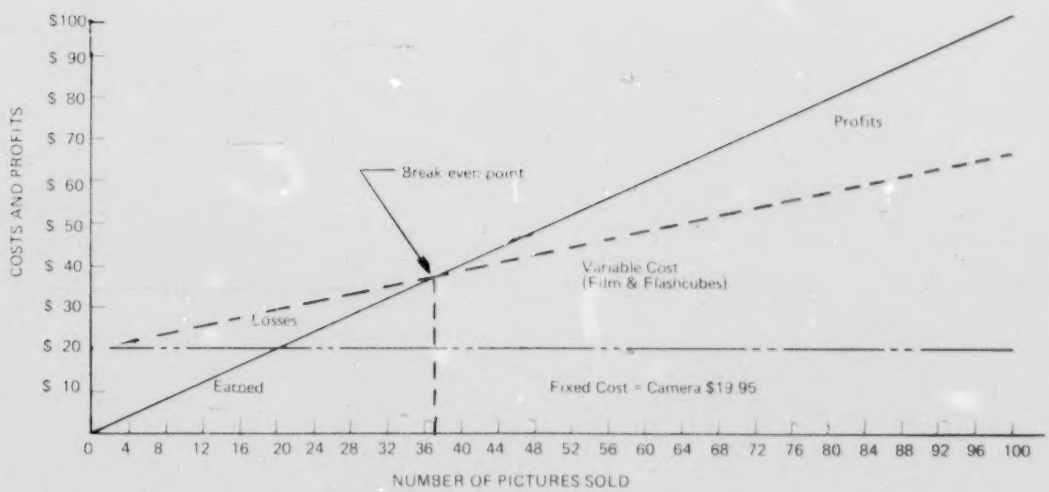
3. What will the supplies, films, and flashcubes cost?

We can find the answers to these questions. First, we will need information on the cost of the equipment and supplies.

	Approximate Cost
Fixed cost:	
Polaroid square-shooter camera	$19.95
Variable cost:	
Color film (8 exposures)	3.19
Flashcubes (pkg. of 3-12 flashes)	.89

With the above information, a break-even chart can be made from which we can find the answers to our questions.

BREAK-EVEN-CHART



A break-even chart contains information that can mean the difference between success or failure of your business.

By looking at the break-even chart, we see that the break-even point is about 37 pictures. At this point you would not have made any profit, but you would have made enough money to pay for the camera; therefore, you would not have any loss. From this point on, all pictures taken and sold will bring a profit. This profit will not be $1.00 per picture because of the variable cost of film and flashcubes which are involved every time you take a picture. After taking and selling 100 pictures, your profit should be about $33. After 200 pictures, the profit would amount to about $86.

With this break-even chart you can also figure how much cost is involved in the business. Taking 100 pictures costs about $63. About $115 is required for making 200 pictures. Hopefully, with this example you now understand the break-even chart. Its real value lies in helping to determine profits, in determining cost requirements, and in setting production quotes to meet profit expectations.

BEST COPY AVAILABLE

PURCHASING MATERIALS AND SUPPLIES

Duty of the Purchasing Department

The main duty of the purchasing department is to see that all materials and supplies needed to operate the corporation are obtained and delivered to the various departments within the organization. This includes not only those materials needed in the production of the company product, but also any office supplies, packaging materials, safety equipment, or supplies required in connection with sales.

The vice president of purchasing is the head of this department and will need a staff of two or three employees.

Making Requisition Forms

Just as in a real business, as the various departments need materials or supplies, they will fill out a requisition form and submit it to the purchasing department. The first job for the purchasing department should be the designing and duplicating of requisition forms. These forms can be designed and typed onto a ditto or mimeograph stencil. Your teacher-advisor can arrange to have them duplicated in the school office. About a dozen of the requisition forms should be given to each department head in the corporation. At a meeting the vice president of purchasing should explain to the other department heads the use of these forms and how they should be filled out as supplies and materials are needed.

Check Requisition Forms Carefully

As requisitions for materials and supplies begin to come in to the purchasing department they should be carefully checked to make sure that they are complete and easy to understand. As an example, you cannot order "a piece of wood" for the production department. You will need to know the number of pieces, the kind of wood, and the size given in thickness x width and x length. This information should be on the requisition form. If they are found to be incorrect, send them back to the department for correction.

Requesting Bids

After the requisition is carefully checked, the department is ready to begin getting bids (price quotations.) There are several ways that this can be handled, and all should work well. One thing to keep in mind, however, is that you may have a

Sometimes bids can be obtained by phoning local stores.

certain time in which to liquidate the corporation. This factor may necessitate making all purchases locally because of the delay required in corresponding with companies some distance away.

Bids can be obtained over the phone or by visiting nearby places of business which sell the items needed. A few people could do this job if the number of items needed is small, or if the list contains many items it could be divided and each member of the class given certain responsibilities. Regardless of the method used, try to get at least three bids on each item and write the prices down so that you can refer to them later.

Here is something to keep in mind. While you are getting the prices, ask if they have the item in stock. You cannot afford to place an order at a store and discover that the items must be ordered. This could cause quite a delay.

It is not a bad idea to explain to the store owners about your student corporation. Quite often businesses give a discount to schools when they are purchasing for educational purposes. Never forget the definition of profit, and try to keep the expenses down to a minimum.

Finding the Best Price

After bids have been obtained on all items, it is time to decide where to buy your materials and supplies. Make a comparison of the prices received on each item; you will accept the lowest bid. It is not necessary to buy everything from one place. Always pick the best price. Once again, the number of items on the list will determine if this comparison is made by a few people or if the entire class will participate.

This process should result in a complete listing which will include the item, the price, and the place at which it will be bought. This is called a purchase order. The purchase order is then presented to the board of directors for their approval.

Purchasing

When approval is given the purchasing can then be done. The items can either be charged, if the store will permit you to do this, or paid for by check. Do not forget to get an invoice or sales slip. If the sales person does not give you one be sure to ask for it. The invoice will be needed later because all expenditures must be accounted for in some way. In other words, if a check is written to a store in the amount of $1.29 for the purchase of a bottle of white glue, a box of tacks, and a ball of string, you should have an invoice or sales slip showing these items and the amount paid. This is the method used to account for the money spent by the corporation.

You may wonder why you need the invoice or sales slip since the purchasing department can see that you have the glue, tacks, and string. Possibly by the time the accounting process takes place these items will have been used in the manufacturing process. Therefore, keep all invoices and sales slips.

If you purchase something for the corporation and are given a sales slip, take a pencil and write the description of each item next to the price. Do not say to yourself, "I'll do it next week." By then you may have forgotten what each price was for. Remember that this sales slip is needed to account for the money spent.

Checking in Materials

As materials and supplies are delivered or brought in they should be carefully checked for damages. The invoice sent with the delivery or the sales slip should be checked against the purchase order to see that it is correct. If any items are missing, an attempt should be made immediately to discover the cause.

BEST COPY AVAILABLE

As purchased materials are received they should be inspected to see that the order is correct and not damaged.

After the purchasing department has checked in the materials or supplies, they are given to someone in the department that placed the requisition. That person should be asked to sign the invoice as proof that it has been received by the department.

Accounting Procedures

The accounting procedures of the purchasing department should consist of a record keeping system of two types.

The first type should be an itemized listing of all purchases. This would include the date of the purchase, the description of the item purchased, the place where it was purchased, and the price paid.

Secondly, all records should be kept that deal with every transaction. For example, if $.59 was spent for a bottle of glue, you should have the following records.

1. A requisition from the department requesting the bottle of glue.
2. A purchase order for the bottle of glue.
3. An invoice or sales slip showing that the bottle of glue was purchased.

Other items may, of course, appear on these requisitions, purchase orders, and invoices if many items were bought and received at the same time.

Summary

The purchasing department has the responsibility of buying all supplies and materials needed in the organization. As they receive requisitions from the various departments, the requisitions are checked and bids are taken from three or more suppliers. By carefully examining all bids the best price is found and the purchase order is prepared. The items can then be purchased. When the purchased items are received they are checked and given to the department which placed the requisition.

BEST COPY AVAILABLE

PLANNING FOR PRODUCTION

Let us review the progress made toward getting into production. Your company has selected the product that it plans to produce and the prototype has been built. Working drawings, parts and materials lists have been completed. Requisitions for materials have been sent to the purchasing manager. Although you may think you have nothing left to do until the materials arrive, you are mistaken. This is a very critical time, for what is done now could well determine the success or failure of the entire business endeavor. Now is the time to get into the planning aspect of production. There is a lot to be done.

Items to consider during this planning stage include:

1. Storage of materials
2. Operation analysis
3. Setting up production line
4. Assigning and training the work force
5. Quality control
6. Trial run

The vice president of production must provide leadership in this planning. He may, however, assign certain members to take over specific responsibilities.

Storage of Materials

Do not wait until purchased materials are delivered to begin making plans for storage. Although it is ideal to store raw materials close to the area where the first operation on the product will be performed, and to store completed products close to the area from which they leave the plant, this may not be possible in your school laboratory. Your teacher-advisor will assign a storage area in or near the laboratory. All materials should be carefully checked when received to be sure they are as ordered and not damaged. The materials can then be stored until needed. Be sure to store the materials in the order in which they will be used.

As other classes may use the same laboratory during the day, it will be necessary to take out and put up materials each work day. In preparing a work schedule, take this fact into consideration.

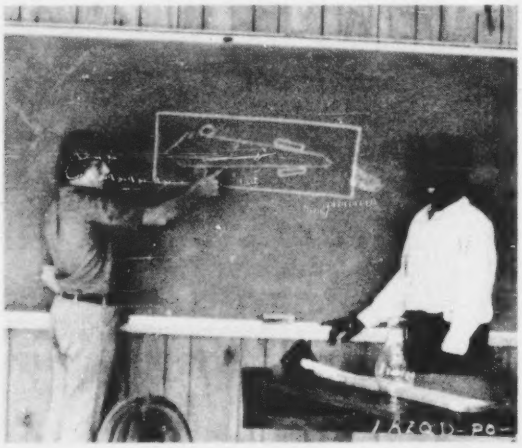
Operation Analysis

Exactly what work has to be done on the raw materials to change it into finished parts and then assemble these parts into a completed project? Answering this

The prototype is studied to determine the operations required in its production.

BEST COPY AVAILABLE

question involves operation analysis and requires a careful study of the prototype and the working drawings of the various parts. Each part is analyzed to learn what operations are required. A wooden part, for example, may have to be cut twice, planed on two edges, two holes drilled, and then sanded. A peg may be cut to length from a dowel rod and then sanded on both ends. Once it is learned what operations must be performed, you can then decide which tools and machines will be used to do these operations. Jigs or fixtures may have to be designed for some of the machines.



Jigs and fixtures must be properly designed in order to make production more efficient.

The prototype and assembly drawings also must be analyzed to learn how the parts should be put together. Such information will be valuable when setting up the assembly line.

Members who helped build the prototype should be of great assistance when undertaking the operation analysis. As these people have already performed the operations when they built the model, they should remember many of the operations and have an understanding of what is involved in each.

For each part (parts should be thought of as finished products) a plan of procedure should be made listing the various steps (operations) that must be done in its construction. For example, a plan of procedure for a part may look like the following:

PLAN OF PROCEDURE

PART NO 2 SIDE NO. REQ. 2

MATERIAL 3/4" White Pine

STEPS

1. Cut to width (6")
2. Cut to length (18")
3. Trace pattern
4. Cut out design
5. Drill pilot holes (4)
6. Sand smooth
7. Apply finish

This plan of procedure does not mention the tools or machines used in performing the operations. Actually, each operation could be done in 2 or 3 ways. The first two operations, for example, could be done using a table saw, a portable hand electric circular saw, or hand saws. The best tools and machines to use will be determined in the next aspect of planning for production.

Setting Up Production Line

You must first decide what equipment will be involved in setting up the production line. The plan of procedure for the various parts should be studied to find out which operations must be performed. The method for performing these operations, hand tools or machines, must now be decided. Of course, if the laboratory is not equipped with the machines required, or if they cannot be used for some reason, hand tools will have to be used.

Route the work to the various machines or work stations in the same order as the plan of procedure indicated.

BEST COPY AVAILABLE

Routing of work must be well planned before the production line is set up.

As one operation is completed, the work is routed to the next machine or work station where the second operation will be performed. A routing chart or flow chart should be made to show how the work in process will move through the complete production cycle. All of the routing should be planned on the flow chart. It is a lot easier to work out things on paper than to move heavy machines and work tables, only to have to move them again. Do not move anything unless it is worked out on the flow chart. Actually, you may be limited by what can be moved if some machines are anchored to the floor or if other classes use the laboratory. Always get your teacher-advisor's permission before moving equipment.

Assembling the parts into the finished product can be done at the last stage of the production line, or a separate assembly line can be set up. The method you use depends upon the number of parts involved and whether they will all be ready at the same time. It may become necessary to stockpile parts as they are completed until enough are produced to begin assembling. In this case the separate assembly line would be best.

With the completion of the flow chart, it can now be seen exactly how the work in process will move through the various stages of production where the operations are performed. Each operation should be assigned a number and that number noted on the flow chart.

Assigning and Training Work Force

When assigning workers to do the various operations it should be kept in mind that this is a learning experience. All members should take part in the production process and should be assigned some operation to perform. This may require assigning two or three people to the same job, depending on the class enrollment. This, however, should allow work to continue even if there is some absenteeism during production.

The production vice president , or his appointee, must see to it that each worker is assigned an operation to perform and understands exactly what he is to do. He should be shown what he is to do, what tools or machine he will use, and the steps to follow in doing the work. The worker should be given a chance to perform the operation on scrap material. The safety director should observe the worker to be sure he is performing the job correctly and safely. If the work appears to be too difficult for the worker, it may be necessary to change him to an easier task.

Having two or three workers assigned to each operation should solve the problem of materials handling. One of the workers can take the completed work to the next work station. Be sure and designate who is to do this job.

Quality Control

Making sure that finished products are free of defects is the responsibility of the quality control manager. Deciding if a product is acceptable or defective can usually be done by inspection after it is completed. But what does it mean if a product is defective? It means that a lot of time and money have been wasted producing a defective product. The quality control manager must see to it that time

BEST COPY AVAILABLE

Inspection should be done before a lot of incorrect parts are made.

and money do not go into producing products that must be rejected. This requires some inspection during the entire production process — not just a final inspection of the finished product. Inspection, however, is costly. It not only consumes time but also slows down production work. Knowing what and when to inspect, therefore, is important. Here are a few rules concerning what and when to inspect.

1. Inspect raw materials — do not waste time working on defective materials.
2. Inspect before doing costly operations — never perform such operations on defective materials.
3. Inspect before assembling — particularly if it is hard to undo.
4. Inspect before any finishing operation — sometimes it covers up defects.
5. Inspect the finished product.

Although the quality control manager is responsible for all inspection, he should not attempt to do it all himself. Since the workers have to handle the materials when performing their various operations, they should be able to inspect it at the same time, providing they have been told what to inspect and how to do it. The inspection process should become just another step in performing the operation.

In many cases this inspection step is very simple and only requires looking at the material. On a woodworking operation the worker can be instructed not to do work on material that is cracked, badly warped, or has knots. No time is lost because the worker can make this visual inspection while he is positioning the work on the machine. In a sewing operation the workers could be told to reject any material that is torn or has faded colors.

Of course, not all inspection is this simple. Sometimes materials must be measured to determine if the work is correct. When possible, simple gauges should be made to speed up this inspection process.

Not everything that is rejected has to be scrapped. In many cases rejected materials can be reworked or used to make other smaller parts.

Trial Run

Regardless of the amount of time and effort put into planning for production, a trial run will usually turn up something that has been overlooked. This is the purpose of the trial run, to uncover those items which have been overlooked. It will also give all production personnel an opportunity to practice their particular job without the usual rush which takes place during actual production.

For the trial run, workers take their places on the line, materials are moved into position, and production begins. This work should be supervised closer than regular production since problem areas are being

sought. Here are a few typical problems that the trial run may uncover:

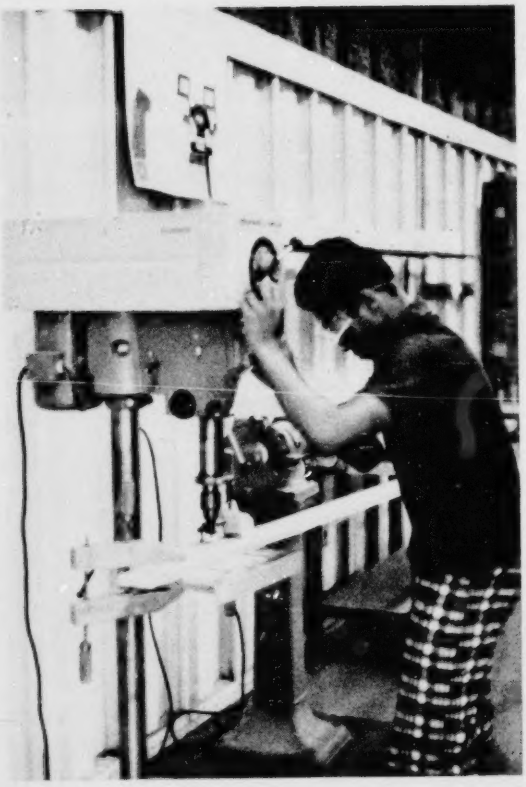
1. Workers not sure of their duties
2. Materials not flowing smoothly
3. Bottlenecks occurring at critical points
4. Too much work being rejected

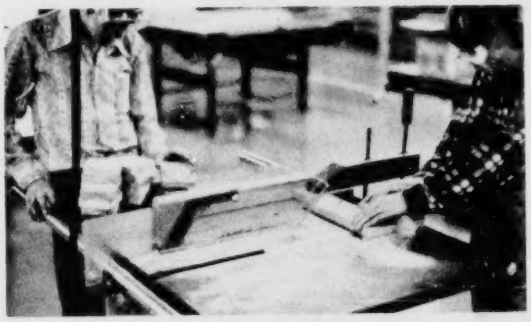
Most of these problems will "work themselves out" as personnel become more familiar and skillful at their tasks. Management must, however, be ready to take action when it appears that the problems are not coming to an end. In some cases personnel changes may have to be made. Additional workers may have to be assigned to assist with some operations where bottlenecks are occurring. More jigs or fixtures may have to be designed and constructed to make work go faster. More instructions may have to be given to some workers.

The time allotted to this trial run should be long enough to let all personnel perform their tasks two or three times. One of two things could happen after that. First, all work may be stopped while needed corrections and adjustments are made. Or secondly, if no major problems show up that cannot be corrected while work continues, you might go right into production with no stoppage of work.

What do you do with any completed parts or products produced during the trial run? If they pass the final inspection they can be used in the advertisement campaign and later sold.

BEST COPY AVAILABLE





During production all members of class pitch in to get the job done.

BEST COPY AVAILABLE

PRODUCTION

If the proper planning has been done, production should get off to a good start. If proper planning was not done, then you are probably in for trouble, because it will now have to be done while production is taking place. This often results in a lot of work stoppages and an unusually large amount of rejected work.

Assuming that proper planning was done and your business is now manufacturing parts and products, much work must still be done to assure that things continue to run smoothly. Much of this work involves production control.

Production Control

The vice president of production, or someone he assigns, has the job of controlling production. This individual must be on the alert to anticipate and solve problems before they happen and cause trouble. Here are a few examples of items that come under production control.

1. Keeping a supply of raw materials — Do not wait until you are almost out of a certain raw material before you reorder. You must anticipate when additional raw materials will be needed and place orders far enough in advance so they will be delivered before your supply runs out. This requires a knowledge of not only the rate at which materials are being used, but also the number of parts completed and the total number required. At the same time, an attempt must be made to avoid over-ordering so as not to have a lot of materials remaining after production is completed. If this happens it could be very costly and could cut heavily into expected profits.

2. Producing the correct number of parts — Parts are not produced at the same rate. To make some parts, many operations are required before they are completed. Other parts may be complete after only a few operations. It is not uncommon in a student operated business to produce a lot of easy-to-make parts, but only a few of the hard-to-make parts. But parts are of no value until assembled into a product. If a product contained two parts, and 150 of one part are made but only 20 of the second part are made, only 20 products can be completed. Keeping track of the number of parts being produced is part of the production control process.

An important part of inventory control is keeping an accurate record of parts being manufactured.

BEST COPY AVAILABLE

3. Making up production delays — Unexpected delays in production can be disastrous to the business operating on a tight schedule. Machinery breakdown, absenteeism, or unplanned school activities can easily cause production delays. The individual in charge of production control must take whatever action is needed to get production back on schedule. Assigning additional workers or working during times other than the regular class period may be necessary. Arrangements for additional working time, however, must always be cleared with the teacher-advisor.

4. Control stock of parts and products — As has been mentioned, parts are not made at the same rate. This may require stockpiling some parts while waiting for others to be completed before assembling can begin. Later as products are assembled, they too may have to be stockpiled until they are delivered to the sales personnel. The individual responsible for production control has to know at all times the exact number of parts and completed products on hand.

5. Checking out products to sales personnel — Because of the limitation of storage space, it may not be possible to turn over all completed products to the sales department for distribution to the sales force. Instead, the sales force may have to check out products directly from the production department as needed. If this is the case, the individual in charge of production control must keep an accurate, up-to-date record of how many and to whom products are issued.

6. New plans if original plans fail — The person in charge of production control must be ready to step in with new plans if it is learned that original plans are not producing the desired results. This could happen in connection with routing of work, materials handling, final assembly, finishing, or in the inspection process; but if something shows up that is not running smoothly it must be changed. There are usually several ways that things can be done, so you must find another method that will produce the desired results.

The teacher-advisor can be a big help in solving production problems.

At times, even though everything is going well, a better method for doing a job may be found. If it means a savings in either time, effort, or materials, or if it will result in a better product, it should be put into effect.

Safety During Production

Much has been done during the planning stage to insure that all work will be done without accidents. In training the work force the correct and safe way to use machines and tools while performing operations has been emphasized. The production line has been arranged to avoid congestion and to eliminate any unsafe conditions. But safety cannot be forgotten just because some planning has been done. Safety must be continuous.

Situations can change in a hurry once production begins. The aisle space between machines purposely left to avoid congestion can quickly become cluttered with materials in process. The workers who appeared to be so concerned about safety during the trial run when operations

were being performed at a slow rate may forget about safety during the fast work pace of production. The necessity of wearing proper safety equipment is often overlooked or forgotten.

It is the duty of the safety director to be constantly on the alert to spot unsafe working conditions or unsafe acts on the part of the workers. Any unsafe conditions or acts detected should be corrected on the spot. If it is necessary, the safety director should feel free to call upon the teacher-advisor to enforce all safety rules and regulations.

Inspection

Although the inspection process — what to inspect, when to inspect, and how to inspect — may have been well planned, the trial run may not have produced enough parts or products to really put it to a proper test. Therefore, during the early stages of production much attention should be given to inspection.

Remember that separating the good products from the bad products is only a small part of the reason for inspection. More important is to avoid spending time and materials producing defective products of no value. This can only be done by inspecting during the entire production process, rather than just inspecting the completed product.

When defective work is found, an attempt should be made to determine why it was defective. Perhaps the worker does not know how to do the operation, the worker was instructed incorrectly, or the machine may be defective or set up wrong. Once the cause is found and explained to the worker, the situation is usually corrected. At times, however, a new worker or a different method of doing the job may have to be substituted in order to eliminate the defective work.

Completing Production

As production comes to a close more people are available for assembly work, as parts are no longer being made. These extra personnel should be given the instruction necessary for performing assembly work and assigned specific duties. It may be desirable to set up additional assembly lines rather than just assigning extra workers to assist those presently doing the work. Regardless of the method used, with everybody now doing assembly work, it should not take long to complete production.

With production completed, attention should be given to putting the laboratory in top condition. Now is the time to throw away all scrap materials, clean tools and machines, and get the storage area cleaned and straightened. All unused supplies and materials should be inventoried, and proper action by the board of directors should be taken for its disposal.

SELLING THE PRODUCT

Duties of the Department

The vice president of sales and his staff have the job of planning the advertisement campaign and managing the sales program. All members of the class, however, will become salesmen during the sales program.

In addition to the sale of the company product, it may become necessary to raise additional capital by selling more stock in the corporation. If so, this department will have the added responsibility of handling this stock-selling campaign.

Preparing Required Forms

In connection with sales, this department will have to prepare two types of forms. These are:

1. order blanks
2. sales receipts

Your teacher-advisor will assist you in designing these forms. They can then be traced or typed onto a ditto or mimeograph stencil. Since the forms do not have to be as large as a full sheet of paper, two or three should be put on the same stencil. Your teacher-advisor can arrange to have these duplicated in the school office. They will, of course, have to be cut apart when ready for use.

Selling Preferred Stock

If the board of directors authorizes the sale of a certain amount of preferred stock, it will be the responsibility of the sales department to plan and supervise this selling program. This involves planning the sales promotion, instructing the class in selling practices, staying informed on how sales are progressing, and handling the money received from stock sales.

Instructing the Sales Force

The biggest job will be that of instructing the class in selling practices. Here are some points that should be included in this instruction.

Whom should I ask to buy stock? If you listed everybody you could think of, you would still overlook some. Everybody is a prospective stock buyer. Here are a few people to consider first.

1. Parents of the students in class — They support everything else the school does and this is just as important.
2. Teachers in the school — They are always asking you to support school activities; now ask them to support yours.
3. Your banker — After all, you did open an account at his bank.
4. Local merchants — Some of your supplies and materials will be bought from them.
5. Local businessmen — They should have a real interest in the free enterprise system and your student corporation.
6. Other students in the school — What are friends for?

What do I tell the people? Explain your student corporation, the product to be made and sold, and what profit is expected. Tell them who the teacher-

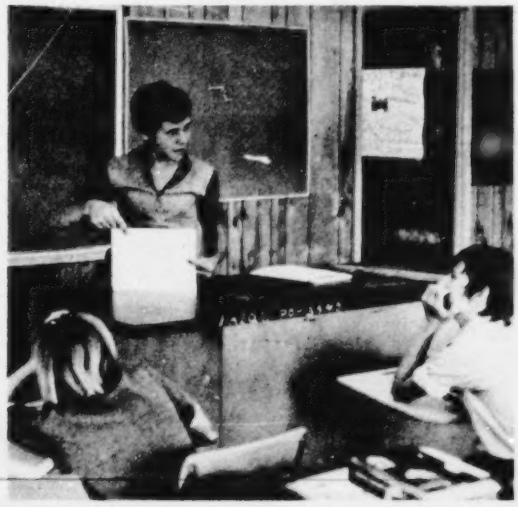
BEST COPY AVAILABLE

advisor is, what other students are involved, and that it is a school activity. You will want to explain that preferred stockholders will have no voting rights in the corporation but will have other advantages. Preferred stockholders will be paid first when the corporation is dissolved, and they will also share equally in whatever profits are earned. Be honest and tell them of the risk involved. If no profit is made they will not receive any dividends. If the corporation goes broke, they could lose their investment. Show them by your enthusiasm, however, that you believe the corporation has every chance of making good.

What is the price of Preferred Stock? $1.00 per share.

How much stock can someone buy? No one should be allowed to buy more than five shares of preferred stock.

How do I make the sale? Take the buyer's check or cash and fill out a receipt completely in duplicate. Give one receipt to the buyer. Tell the person that his stock certificate will be delivered or mailed within a few days.



Before the start of the stock sale campaign the certificate must be carefully explained to the class.

What should we do with the money? The money and the copy of the receipt should be turned in to the sales department.

A simple training program will be needed to make sure that the salesmen (all class members) understand the above information. You should be able to do this in 15 or 20 minutes at the start of the class period. Emphasize the importance of turning in money as soon as sales are made so that you will be able to keep track of the number of preferred stock being sold. Remember, you don't want to sell more than is necessary.

Designing Stock Certificates

Since your corporation is planning to raise capital by selling stock, certificates must be designed and reproduced. After they are designed they can be duplicated on either a ditto or mimeograph machine. Your teacher-advisor can arrange to have this done in the school office.

Someone must be assigned to design the stock certificate.

BEST COPY AVAILABLE

After being traced onto a stencil, the stock certificates are run off on a copying machine.

Designing of the stock certificate can be done by the committee, small group, or entire class method. Regardless of the method used, the class should be given the chance to vote on the final design. The approved design can be traced onto a ditto or mimeograph stencil and duplicated on the machine.

A word of caution should be mentioned about the safekeeping of the stock certificates. These certificates represent ownership in the corporation and because of this they are valuable. Take care of them. Later when the corporation is dissolved, each stockholder must surrender (turn in) his stock certificate to the treasurer to obtain his invested money plus whatever profits he may have earned. It is a good idea to design the certificates so that they can be numbered as they are sold. In this way a record can be kept of who has bought stock and the certificate number which was issued to them.

The Advertisment Campaign

Regardless of how well a product is made, what a good buy it may be, or how much it is needed, it will not sell unless people know about it. The purpose of your advertisement campaign is to bring the product to the attention of the public.

Do not wait until all of the products have been manufactured before beginning the advertisement campaign; start as soon as the corporation is formed. Most schools have a weekly student newspaper, and that would be a good place to start your advertisement. Write an article about the student corporation and what it plans to do. Even if a product has not been selected yet, you can still advertise that you will soon be manufacturing products. The student newspaper should be used throughout the school term to keep the student body informed about the progress of the corporation.

After the corporation has selected its product and the prototype has been built, the prototype could be put on display someplace in the school building so that all can see it. Posters announcing the product can also be made and displayed in the school.

Most local newspapers will be glad to do a story on your student corporation if

Posters are effective means of advertising the company product.

BEST COPY AVAILABLE

they are informed about it. This is an excellent source of advertisement because it gets the attention of the entire community. It is also excellent public relations for the school.

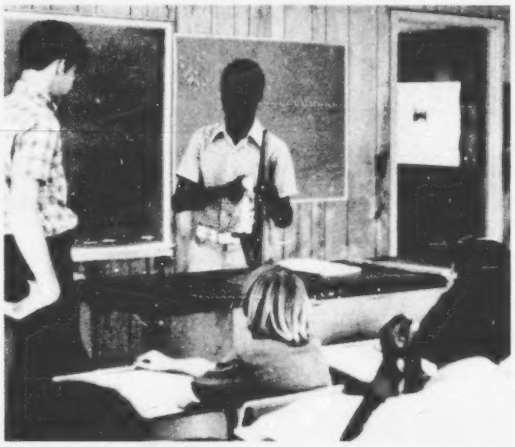
Still another method of advertisement which will put your product before the public would be posters or displays in the community shopping malls. Take a folding card table, two chairs, and the prototype to the shopping mall on a Saturday and ask someone for permission to display the product. As people pass, you will get the chance to tell them about your product and possibly even get some orders.

By giving some time and thought to this advertisement campaign, you will be able to come up with many more ideas. Keep in mind that if extra help is required in doing this work, you should let the personnel department know of your needs. For example, if you plan to set up a display at the shopping mall you will want a lot of people working shifts during the day.

Advanced Sales

Selling products before they are manufactured is referred to as advanced sales. Some businesses use this method as a means of raising working capital. In your student corporation, however, it is not a good idea to make advanced sales because you may not be able to produce the number of products expected and would have to refund the monies received. And worse, by that time you may not have the money to make refunds.

You can, however, take advanced orders and the customer will not pay for the product until after it is produced and delivered. In the event that you cannot "deliver," you have no problem because the product was not sold; and no refund is necessary.



A good sales demonstration should be developed and presented to the class as part of the sales training program.

When someone wants to order one of the corporation's products, the person should fill out an order blank, giving his name and information telling whether it will be picked up or delivered. If it is to be delivered be sure to get the address. As the products are completed they may be picked up or delivered and the money may be received for them.

The vice president of sales must keep the vice president of production informed as to the number of advanced orders being taken. These advanced sales could have a direct effect on production planning.

Do not overlook the school secretary. You might just make a sale.

BEST COPY AVAILABLE

The Sales Program

As the completed products begin to come off the assembly line, you are ready to get into high gear with sales. Where to sell depends, of course, on the type of product your corporation has manufactured. If it is the type of product that has student appeal, then the school building is the place to set up your business. Shopping malls or door-to-door selling may be best if the product is of an adult nature. Regardless of where you sell, remember to always get permission before starting.

When selling at school, try to set up a booth where the main traffic in the building passes. The basement, main hallway, inside the main entrance, or outside of the lunchroom should be good spots. Assign different students in the corporation to be at this booth before school, during lunch, and after school for the purpose of making sales.

The lunchroom personnel might be interested in your product.

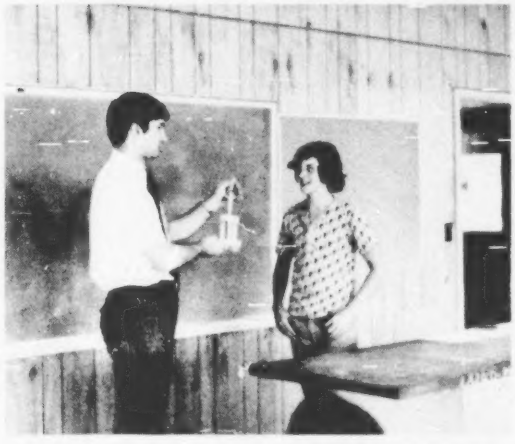
Be sure to have money ready to make change. You do not want to lose a sale because you don't have the proper change. The vice president of sales should see that change money is made available.

A sales receipt should be made out in duplicate. This can easily be done by placing a sheet of carbon paper between two receipt forms. Be sure and fill out the receipt completely, giving one copy to the customer and keeping the other. The receipt kept will be used for accounting purposes and also when figuring commissions.

Commissions and Sales Award

In a real business when a salesman sells a product, he is paid a commission. Usually this commission is about 5 to 10% of the selling price of the product. Your student corporation should consider paying commissions; it will not only encourage sales, but will also reward those who work hardest during the selling campaign.

Another idea would be an award for the outstanding salesman, the student who sells the most products. A small trophy could be bought and presented during the school's Awards Day programs. If you decide to do this, have a picture taken at the presentation and have it put in the local newspaper.



Awards for outstanding salesmanship are incentives to boost sales efforts.

Since both commissions and the sales award will involve money, the idea will have to be presented to the board of directors for approval. If it is decided to pay the commissions and present the sales award, the money involved must be included in the price of the product.

Accounting Procedures

The accounting procedures of the sales department consist of record keeping of three types. These are:

1. Expense record
2. Sales record
3. Bank deposit receipts

Expense records — All expenses in connection with advertisement or sales should be recorded. This should include the date of purchase, the item bought, and the price paid. For all expenses there should also be a requisition form containing each item.

Sales records — An accounting of all sales, whether stocks or products, should be kept. The date of the sale, the customer's name, the price paid, and the salesman's name should be recorded.

Bank deposit receipts — All bank deposit receipts should be kept. The total amount of the bank deposit receipts should equal the amount of money taken in from the sale of both stock and products.

The vice president of sales must keep his records up-to-date. At each board of directors meeting he should be prepared to tell the number of products sold and the amount of money received if he is asked for such a report.

Summary

The sales department, headed by the vice president of sales, is responsible for planning the advertisement campaign and managing the sales program. Advertisement should begin as soon as the corporation is formed and should continue until all products are sold. Since the purpose of advertisement is to get the product to the attention of the public, all means available should be used.

Advanced orders for products can be taken before the products are actually finished. As products are completed, the sales program must be ready to go into high gear. Set up a booth and start selling. If a slump in sales begins to show up, that is a signal to crank up the advertisement again.

Detailed records must be kept on all sales, money received, and the salesmen. The latter is particularly important if commissions are to be paid and a sales award presented.

TERMINATION OF A CORPORATION

It has been known from the beginning that your company would go out of business at the end of the school year or at the end of the time assigned for this endeavor by the teacher-advisor. There are three reasons for this. First, it will give your groups the experience of closing out a business; and secondly, it will allow those students who enroll in the course next year to have the same experiences of organizing and running a business as your class has had. The third reason is to provide a means for your class to get back the money invested in the business, plus sharing in whatever profits may have been made. After all, your class did the work and, therefore, should get the rewards.

Planning for Liquidation

Even though the process of liquidating your student corporation is simple, plans should be made to insure that it goes smoothly. This planning is necessary so that things are done on time and not left until the last minute. Most of this planning will be done by the president, treasurer, vice president of production, and vice president of sales. Here are some items that should be planned before liquidation:

1. Ending production
2. Setting deadline on sales
3. Selling all corporation assets
4. Bring company records up-to-date
5. Preparing annual report

Ending production — Production must be scheduled to stop sometime prior to the time set for liquidation. Just how soon to stop depends on several things; mostly, however, on how well and fast sales are going. Remember that the sales force must have time to sell the products that are produced.

Production should be scheduled so as to use up as much materials and supplies as possible. Of course, all purchasing of materials and supplies should stop even before production comes to a halt.

Setting deadline on sales — A date should be set at which time all monies from sales, as well as any unsold products, must be given to the sales department. Do not wait until the last minute to do this. You may find that you have more unsold products than you thought, with no time left to do anything with them. If the deadline is set about a week prior to liquidation you will have time to plan a "liquidation sale" and, hopefully, sell these few remaining products. You should cut price as much as needed to sell them. At this point, any money received for these products, even if it is below cost, is better than ending the business with unsold products. This sale could last until the day before liquidation.

Selling all corporation assets — Part of the liquidation process involves converting all assets into cash. Assets are anything of value which the company owns. Such assets would include any unused materials and supplies, small tools which may have been purchased, and unfinished or unsold products. Some members of the company might want to purchase some of these items. The price set on these should be low enough to attract sales.

BEST COPY AVAILABLE

Assets that cannot be sold should be disposed of, rather than just left in the laboratory. The board of directors might consider the following suggestions concerning the disposal of unsold assets.

1. Finished products — These might be presented as gifts to people that have been helpful to the company. Such people may include the school secretary, principal, or your teacher-advisor.

2. Materials, supplies, and small tools — Such items could be given to the teacher-advisor, who could put them to good use with other student businesses in the future.

Bringing company records up-to-date — The treasurer and others responsible for record keeping should see that all records are brought up-to-date. All outstanding bills should be paid. Wages, salaries, and commissions should be figured and given to the treasurer so that he can prepare the payroll.

Having these records up-to-date will be a great help when the annual report is prepared.

Preparing annual report — The treasurer is responsible for the preparation of the annual report. He may select a committee to assist with this undertaking. A copy of the report is sent to all stockholders when the company is liquidated.

This report should tell what the company did throughout the length of its existence. It also contains a closing balance sheet, a statement of profit or loss, and a liquidation report explaining how the company's assets were distributed. Some of this information will not be known until just prior to actual liquidation; however, plans for its preparation, duplication, and distribution should begin early.

Figuring Dividends

The treasurer should figure the amount of dividends due each stockholder just prior to the final board of directors meeting. Checks should also be prepared to hand out at this meeting.

At the final meeting the corporation is terminated.

In figuring the amount due each stockholder, the following formula should be used:

$$\text{Amount due each stockholder} = \frac{\text{Total Worth}}{\text{No. of Shares Sold}} \times \text{No. of shares owned}$$

As an example, suppose one member of the corporation owns three shares of stock. The total number of shares sold was 85. The corporation worth at time of liquidation is $92.65. How much should this individual receive?

$$\text{Amount due} = \frac{\$92.65}{85} \times 3 = \$3.27$$

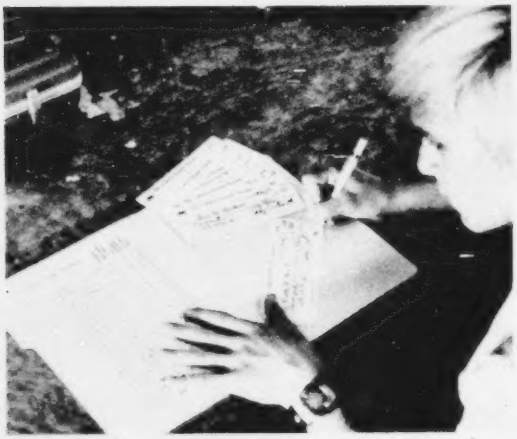
The $3.27 due this individual represents a profit of $.27 on a $3.00 investment for three shares of stock. This would be an earning of 9% during a period of less than 6 months. For a comparison, if that

BEST COPY AVAILABLE

same $3.00 had been put in a savings account, it would be worth only $3.07 (at 5% compounded semi-annually). This 9%, then, would represent a good earning on that investment.

Liquidation Process

At the final board of directors meeting the president will announce that the purpose of the meeting is to report the present financial condition of the corporation and to take action to terminate the business. The treasurer then reads the financial statement and explains what dividends are to be paid. The president then recommends that the corporation be dissolved and calls for a vote of the board of directors. Since it has been know that the company will be dissolved, there would be no votes against this recommendation. Each stockholder is given a copy of the annual report and his dividend check. The business is now officially terminated.



Dividend checks should be prepared prior to the meeting to dissolve the corporation.

THE SERVICE INDUSTRY

Many businesses do not manufacture a product. Instead, they provide a service of some type which is sold to the public or to other businesses. Your student corporation may decide to provide a service rather than manufacture a product. The board of directors must make this decision early in the life of the corporation. The decision should be made with the objectives of the course fully in mind. Would these objectives be met best by producing a product or by providing a service? The answer to this question will indicate the direction your student corporation should follow. Your teacher-advisor can be most helpful in providing the information needed before a decision is reached.

Service vs. Manufacture

There is no shortcut to success. Providing a service rather than manufacturing a product will not reduce the amount of work required or make it easier or shorter. It will simply change the wording of some questions that must be answered and the nature of some problems that must be solved. What product to manufacture changes to what service to provide. What price to charge for the product in order to make a profit changes to what price to charge for the service in order to make a profit. The problems of advertisement and sales remain the same because the public must be made aware of the product or service, and both must be sold. Remember, sales are your only source of income. In order to recover your capital outlay, plus make a profit, something must be sold.

Same Approach

Regardless of which direction your student corporation takes, organization, planning, purchasing needed materials and supplies, determining the best method for doing the job, training the work force, doing the actual job, advertisement, and sales are all involved. If a service is to be provided, there would, of course, be no need to design a product and build models or prototypes. This does not mean, however, that there would be no engineering work involved. The engineering personnel would devote their attention to studying the tasks involved in performing the service and designing tools and other apparatus to allow the task to be done more efficiently.

Your approach to this endeavor should be the same regardless of the type of industry undertaken. That approach should be a combination of classroom study and laboratory activities. Through both, you and your classmates will learn about and become involved in industry and the free enterprise system under which it operates.